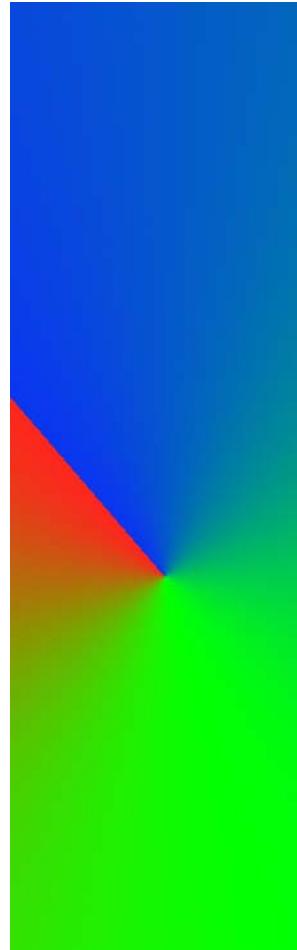


SuperView 4000-4/4

User's Guide





DOCUMENT

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INTRODUCTION

PRODUCT OVERVIEW

The SuperView 4000-4/4 is a high performance, compact video *windowing* system that displays eight windows (four video windows and four graphics windows) on a high-resolution RGB display device. If you are not familiar with the concepts of a windowing system please refer to [Appendix A](#), Window Concepts.

The following sources can be used as *video* inputs for the four *video* windows:

- Composite video
- S-Video

The following sources can be used as *graphics* inputs for the four *graphics* windows:

- RGB / YP_bP_r / HDTV component
- DVI

On your high-resolution display, eight input sources (four video and four computer) can be mixed and matched simultaneously, and each window can be independently scaled, positioned panned and zoomed.



Figure 1-1. SuperView 4000-4/4 Displays Eight Inputs on a Single Monitor

The SuperView 4000-4/4 outputs a high-resolution image, at a user-selected scan rate up to 1920 x 1200 pixel resolution. Access to all SuperView 4000-4/4 functions is supported remotely by either RS-232 serial communications or via network control (Ethernet 10/100/1000 BaseT).

SYSTEM FEATURES

The SuperView 4000-4/4 includes the following standard features and functions:

- **Flexible input channels** Video input channels accept NTSC/PAL composite or S-Video. Graphics input channels accept YP_bP_r component (HDTV), high-resolution RGB signals or digital input (DVI format). Full 24-bit color processing is used throughout the system.

Note

HDTV (High Definition Television) input signals can be processed through a channel's RGB/YP_bP_r connector.

- **Window manipulation** Windows can be independently positioned, scaled, and clipped to any size or shape desired. Scaling is continuous up to the full size of the display raster. The system also supports zoom and pan within a window and input freezing.
- **User-defined presets** SuperView 4000-4/4 stores and recalls up to ten user-defined presets, each containing information about window size and position, image controls, and image positioning on screen.
- **Remote control** Complete system control is supported via the RS-232 serial port or the 10/100/1000 BaseT Ethernet port. Many control parameters can be stored in nonvolatile memory for later use.
- **High-resolution output** The system's high-resolution analog RGB output (up to 1920 x 1200 pixels) is ideal for use on a computer monitor or a high scan rate projector. The output displays up to eight windows simultaneously.
- **Auto sync** SuperView 4000-4/4 automatically detects and locks to *all* computer sync signals. Industry standard and custom video timings are supported.

A WORD ABOUT WINDOW INPUTS

Each of the SuperView 4000-4/4 graphics windows (inputs 1-4) provides user selection of either an analog RGB/component, HDTV or DVI input. Each of the SuperView 4000-4/4 video windows (inputs 5-8) provides user selection of either a composite video or S-video source. Using control commands, users can dynamically switch between any one of the input sources.

For example, you could connect **S-Video** from a camera and **Composite** video from a VHS tape deck all to Window 5's input connectors, and then switch between them using control commands.

Note that because the Component/HDTV and RGB input signals use the same 15-pin D input connector, you can not connect both RGB and component/HDTV inputs to a given channel simultaneously.

Please note the following important points regarding inputs:

- Video inputs can originate from devices such as TV cameras, video cassette recorders, DVD players or video teleconferencing systems.
- Analog RGB inputs typically originate from a computer. These inputs can be interlaced or non-interlaced, up to 1920 x 1200 pixel resolution, and refresh rates (or frame rate) up to 200 Hz.
- The system's computer inputs can be configured with any sync format (sync on green, composite sync, or separate H- and V-drive).

The figure below illustrates a block diagram of the SuperView 4000-4/4, showing the four graphics input channels and four video input channels.

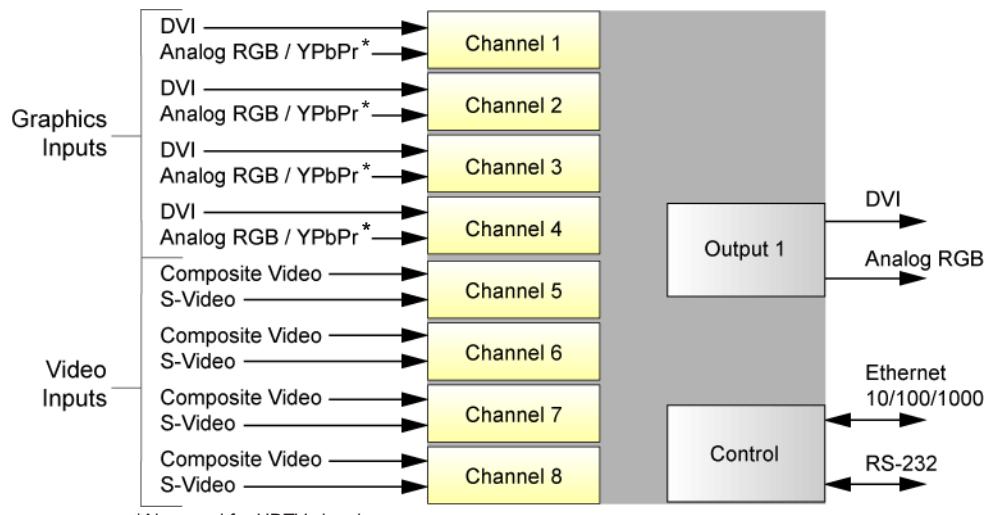


Figure 1-2. SuperView 4000-4/4 Block Diagram

A WORD ABOUT SYSTEM OUTPUTS

The system provides both an analog output and a digital output from a single DVI-I connector. The same image is simultaneously output on both connectors.

All input signals to the SuperView 4000-4/4 are converted to the selected output resolution (adjustable up to 1920 pixels by 1200 lines), with horizontal scan rates ranging from 12 to 125 kHz.

A WORD ABOUT SCAN RATES

SuperView 4000-4/4 specifications state that output resolution is adjustable up to 1920 pixels by 1200 lines, and horizontal scan rates are adjustable from 15 to 125 kHz. However, users should be aware that there are several important constraints to system resolution, including:

- Maximum pixel clock (also known as sample rate)
- Maximum number of pixels that can be processed
- Maximum number of lines that can be processed

These factors are all *interrelated* with the system's refresh rate (also known as frame rate). When configuring your system output, the following are a few rules of thumb to keep in mind:

- Sample rate is directly proportional to the product of:
$$(\# \text{ of pixels per line}) \times (\# \text{ lines}) \times (\text{refresh rate})$$
Therefore, if a higher refresh rate is desired, the sample rate must be increased. For example:
 - ~ A 1600 x 1200 output @ 60 Hz refresh rate requires a pixel clock of 162 MHz which is equal to the SuperView 4000-4/4 maximum pixel clock of 162 MHz.
 - ~ A 1600 x 1200 output @ 65 Hz refresh rate requires a pixel clock of 175 MHz which is greater than the maximum of 162 MHz.
- A higher refresh rate can also be achieved by reducing either the # of pixels per line or the # of lines per frame. (Note that the ratio of active pixels per line to the number of active lines is the aspect ratio, typically 4:3 or 16:9.) For example:
 - ~ A 1600 x 1200 output @ 85 Hz refresh rate requires a pixel clock of 229.5 MHz which is greater than the maximum pixel clock of 162 MHz.
 - ~ A 1280 x 960 output @ 85 Hz refresh rate requires a pixel clock of 148.5 MHz which is less than the SuperView 4000-4/4 maximum pixel clock of 162 MHz.

When configuring your system, the important factor to remember is the *interrelation* between specifications:

- **Yes** you can adjust your system 's output resolution up to 1600 pixels by 1200 lines.
- **Yes** you can adjust the system 's output horizontal scan rate from 12 to 125 kHz.

- **No** you can not configure resolution at 1600 x 1200 with a refresh rate of 100 Hz because this will exceed the maximum pixel clock.

SUPERVIEW 4000-4/4 CONTROL

System control for the SuperView 4000-4/4 is provided via the RS-232 serial port or the 10/100/1000 BaseT Ethernet port. There are no controls on the chassis itself.

- The **RS-232** serial port connects to an ASCII terminal, any computer with a serial port or an external device such as a touchpad. Commands are sent from the terminal or computer to the SuperView 4000-4/4. Refer to Chapter 4, [Command Line Interface](#) for a complete description of command syntax.
- The **Ethernet** port (10/100/1000 BaseT) allows a SuperView 4000-4/4 system to be connected to a local area network (LAN) or directly to a PC properly equipped with a network card. Note that direct connection requires the use of an Ethernet hub or Ethernet cross-over cable.

FEATURE SUMMARY

Following is a concise summary of SuperView 4000-4/4 features:

- System:
 - ~ Displays up to eight windows simultaneously: four video windows and four graphics windows.
 - ~ Full 24-bit color processing is used throughout.
 - ~ System control via serial RS-232 or 10/100/1000 BaseT Ethernet.
 - ~ Compact 1RU package.
- Inputs:
 - ~ Supports a wide range of analog RGB inputs with resolutions up to 1920 x 1200 @ 75 Hz frame rate.
 - ~ Supports HDTV / YP_bP_r input.
 - ~ Supports DVI inputs up to 1920 x 1200 @ 60Hz.
 - ~ Video inputs are selectable between S-Video and Composite formats, in both NTSC and PAL video standards.
- Outputs:
 - ~ Single output connector supports both DVI and analog signals.
 - ~ Analog RGB output up to 1920 x 1200 @ 75Hz.
 - ~ DVI output up to 1920 x 1200 @ 60Hz.
 - ~ Adjustable output gamma to optimize performance with a variety of display technologies.
 - ~ Output can free run or genlock to input channel 1.
- Special features:
 - ~ High quality filtering for window resizing.
 - ~ Pan, zoom, border, label and freeze each window.
 - ~ Fade windows in /out of background
 - ~ Colored and shaded backgrounds.
 - ~ Export / Import system settings.



INSTALLATION AND SET UP

IN THIS CHAPTER

This chapter provides instructions for installing and setting up your SuperView 4000-4/4 system. The following topics are discussed:

- [Standard Supplied Components](#)
- [Optional Items](#)
- [Rack Mounting](#)
- [Front Panel](#)
- [Rear Panel](#)
- [Installation](#)
- [System Setup](#)

STANDARD SUPPLIED COMPONENTS

The following equipment is included in the SuperView 4000-4/4 shipping carton:

Table 2-1. Standard Supplied Components

Item	Part Number
SuperView 4000-4/4	---
SuperView 4000-4/4 User Manual (on CD-ROM)	350-8539
Power cord (110 or 220 volt)	520-1188 or 520-0271-1
DVI - VGA Adapter	520-8107

OPTIONAL ITEMS

RGB Spectrum can optionally provide additional equipment that may be useful in installing and operating the SuperView 4000-4/4. The items listed below may be purchased separately from RGB Spectrum.

Table 2-2. Optional Items

Item	Part Number	Description
VGA Cable	520-0298-1	15-pin HD Male to 15-pin HD Male, 6 ft. Use to connect your analog output/inputs to sources with a female VGA connector.
VGA-to-BNC Adapter	520-0251-1	15-pin HD Male to a 5 BNC cable bundle Male, 6 ft. 10 inches. Use to connect the analog output/inputs to sources with BNC connectors.
Compact Flash Card Reader		Internal compact flash card reader.

RACK MOUNTING

The SuperView 4000-4/4 chassis is designed to be mounted in a standard 19" rack. Please note the following important points:

- Ensure that the SuperView 4000-4/4 is positioned in the rack where the side air intake and exhaust vents are not blocked.
- Rack mount the unit from the front rack ears using four rack screws (not supplied). Rack threads may be metric or otherwise depending upon the rack type.
- It is typically easier to install the *lower* of the two mounting holes first.

Important

Do not use the SuperView 4000-4/4 as a shelf to support other pieces of equipment. If you do, the rack ears and mounting screws may be damaged.

- The SuperView 4000-4/4 is provided with a rear rack bracket and arm to support the rear of the chassis. It is recommended that you use the bracket to provide additional stability.
- Attach the rear brackets to the rack adapter at the rear of your chassis.
- Slide an arm through the slot on the rack adapter and attach the arm to the chassis.
- Attach the arm to the rear bracket by means of the fasteners located in the arms.

FRONT PANEL

The figure below illustrates a front panel view of the SuperView 4000-4/4.

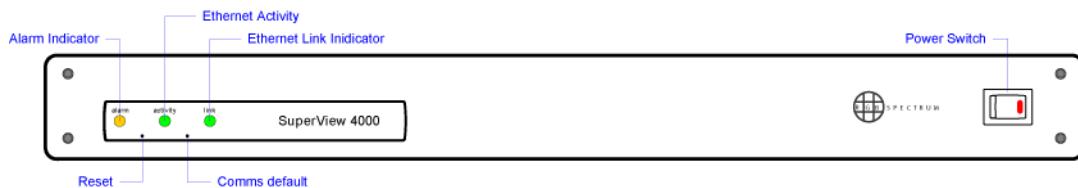


Figure 2-1. SuperView 4000-4/4 Front Panel View

Descriptions of each control and indicator are provided below:

1) Alarm Indicator

The Alarm LED glows solid amber when the SuperView 4000-4/4's internal electronics have exceeded the maximum internal temperature of 60 degrees Celsius. Note that this is a warning only, and users should take corrective action to avoid damage to the unit.

2) Ethernet Activity Indicator

The Activity LED blinks green when there is data traffic over the SuperView 4000-4/4's Ethernet connection.

3) Ethernet Link LED

The Link LED glows solid green when there is a valid Ethernet connection between SuperView 4000-4/4 and another Ethernet device. Note that if an RS-232 connection *only* is used, this LED will be off.

4) Reset Button

Press the Reset Button to perform a hard reset. System parameters are unchanged (this is equivalent to cycling the power). Use an unfolded paper clip to press the button, located inside the small access hole.

5) Comms Default Button

Press the Communications Default Button to reset the IP address to the factory default address (192.168.1.200). Use an unfolded paper clip to press the button, located inside the small access hole.

6) AC Power Switch

Use the AC Power Switch to turn the SuperView 4000-4/4 on and off. When the unit is on, the LED inside the switch glows red.

REAR PANEL

The figure below shows a view of the SuperView 4000-4/4 rear panel.

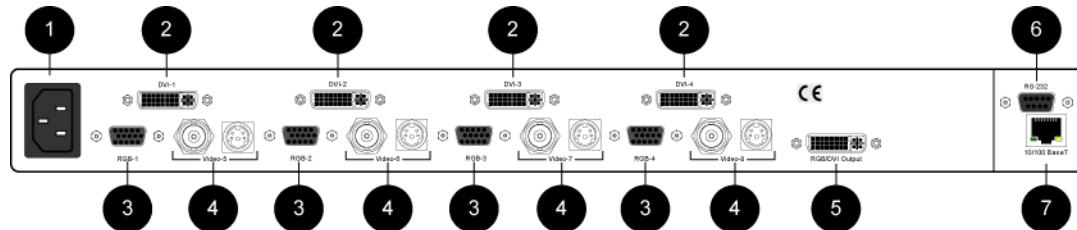


Figure 2-2. SuperView 4000-4/4 Rear Panel View

1) AC Power Connector	5) Graphic Output
2) DVI Input Connectors	6) RS-232 Serial Port
3) Analog RGB Input connectors	7) Ethernet Port
4) Video Inputs	

Descriptions of each section and connector are provided below:

1) AC Power Connector

One AC Power Connector (IEC 320 three pin) is provided for the system's universal power supply, which operates from any power source with a line voltage in the range of 100 - 260 VAC.

2) DVI Input Connectors

Each of the four graphics windows (1-4) can accept an input from either a DVI source or an analog RGB source. The DVI connectors use the standard 29 pin DVI-I connector.

3) Analog RGB Input connectors

Each of the four graphics windows (1-4) can accept an input from either a DVI source or an analog RGB source. The RGB connectors use the standard 15 pin female sub miniature HD connector. This input supports 3, 4 or 5 wire connections, and is typically used to connect the output of a computer to SuperView 4000-4/4.

Note

Typically, the output of a computer is provided in **RGB** format and connected to SuperView 4000-4/4 on this input. This input may also be used to connect HDTV signals, which can originate in **RGB** or **YPbPr** formats.

4) Video Inputs

Each of the four video inputs can accept a signal from either a Composite Video source or an S-Video source.

- ~ **Composite Video** One BNC female connector is provided for NTSC or PAL composite video, a signal that typically originates from a VCR or camera. An adapter may be required when connecting this input to consumer equipment, which typically uses a phono connector for composite video (professional equipment typically uses BNC connectors).
- ~ **S-Video** One 4 pin mini-DIN connector is provided for NTSC or PAL S-Video, a signal that is typically of higher quality than composite video, and originates from many DVD players and cameras. Note that this connector can alternatively be used to connect a second composite input. In this case a special cable will be needed to convert from the mini DIN connector to BNC (or phono) connector that is typically used for composite video signals.

5) Graphic Output

One standard DVI-I 29-pin connector is provided for the SuperView 4000-4/4. This connector delivers both analog and digital output signals simultaneously.

6) RS-232 Serial Port

One 9 pin female D-Sub connector is provided for local RS-232 control from an external device.

Please note:

- ~ Use this connector when the controlling device is physically close to SuperView 4000-4/4 and control across a network is not required.
- ~ Connection to a PC, external controller or serial terminal can be made using this connector.

7) Ethernet Port

One 10/100/1000 BaseT Ethernet (RJ-45 connector) is provided for over a network or from a local computer using peer to peer communication. Using a standard Ethernet cable, you can connect directly to a local area network (LAN). Use this port when control over a network is a requirement.

Note

SuperView 4000-4/4 can be controlled by using either the RS-232 port or the 10/100/1000 BaseT Ethernet port. Note that commands from either port will operate the unit and affect the system state, but an application on the Ethernet port will be unaware of the changes made by an independent application using the RS-232 port (and vice versa). Because of this operation from both ports simultaneously is not recommended.

INSTALLATION

This section provides SuperView 4000-4/4 installation instructions. All connections are made to the rear of the chassis. Refer to [Figure 2-2](#) for the location of each connector.

Note

Ensure that the SuperView 4000-4/4 is rack mounted before continuing. If not, refer to [Rack Mounting](#) (page 8) for instructions.

Use the following steps to install the SuperView 4000-4/4:

1. Connect Power Connect a power cord to the AC Power Connector. The SuperView 4000-4/4 is equipped with a universal, 100-264 V, 50-400 Hz power supply.
2. Connect Inputs Connect the desired graphic sources to inputs 1 through 4 and video sources to inputs 5-8.

Note:

- ~ For a channel's composite input, use a standard BNC cable.
- ~ The S-video input can be used to connect an S-Video signal **or** an additional composite video signal. To connect an S-Video signal, use a standard 4 pin mini-DIN S-Video cable. To connect a composite video signal you will need to use a mini-DIN to BNC or mini-DIN to phono adapter cable and connect the composite video signal to the Y' channel.
- ~ For a channel's RGB / YP_bP_r input, use a standard VGA cable with a 15 pin male D-sub connector. The SuperView 4000-4/4's input connector will support 3, 4 or 5 wire connections. In Appendix C, refer to the [High Resolution Analog Connector](#) section for pinout information.
- ~ For a channel's digital input, use a standard DVI cable. In Appendix C, refer to the [DVI-I Connector](#) section for pinout information.

Remember that multiple sources can be connected simultaneously to each corresponding input (composite, S-Video, RGB and digital), but only one input can be shown in a window at a time. You can choose which of these sources to display on a given window by using the [INputSOUrCe](#) command, or directly from the Web Control Panel (WCP).

Refer to Chapter 3, [Operations](#), for more information regarding WCP operation.

Refer to Chapter 4, [Command Line Interface](#) for a complete description of SuperView 4000-4/4 commands.

3. **Connect Graphic Output** Using a DVI-I interconnect cable, connect the Output to the desired display device. Remember that the output connector supports both analog and DVI output signals. With a standard DVI interconnect cable, you can connect directly to a DVI capable monitor.

- ~ If you wish to connect to a monitor with an analog RGB input, you will need to use an adapter which converts from the DVI connector directly to a 15 pin D-sub connector. This adapter is provided as a standard item with your SuperView 4000-4/4. As an alternative, standard cables are readily available to convert from the DVI connector to either 15-pin D connectors or BNC connectors.

In Appendix C, refer to the [DVI-I Connector](#) section for detailed wiring instructions for the Graphic Output connectors.

Note Analog display devices must be able to accept RGB inputs of at least 15 kHz.

4. **Select a Control Method** Setting up an external device to communicate with the SuperView 4000-4/4 can be accomplished via an RS-232 serial connection or via an Ethernet connection:

- ~ **Serial Control** To control SuperView 4000-4/4 using a terminal emulation program (such as Hyperterminal or Procomm), connect the COM port of your computer (or other terminal control device) to SuperView 4000-4/4's RS-232 serial port. This enables you to control the SuperView 4000-4/4 using ASCII commands. A straight through cable (typically 9 pin male to female with one-to-one wiring) will be required.

Refer to the [RS-232 Serial Control Setup](#) section below for more information.

- ~ **Ethernet Control** To control the SuperView 4000-4/4 over a network, connect an Ethernet cable (from your LAN, Ethernet hub or switch) to the SuperView 4000-4/4's 10/100/1000 BaseT Ethernet port. This method allows you to use a Telnet session or a standard web browser to access SuperView 4000-4/4's internal Web Control Panel. Ethernet is also ideal for controlling *multiple* SuperView 4000-4/4s, eliminating the need to daisy-chain units.

Once communications have been established with one of the above methods, you will be able to adjust all SuperView 4000-4/4 system parameters.

Note A PC can be connected *directly* to the SuperView 4000-4/4's Ethernet port, without being connected to a network. For this direct connect method, use an inexpensive Ethernet hub or an Ethernet cross-over cable. In Appendix C, refer to the [Ethernet Connector](#) section for pinout details.

SYSTEM SETUP

The following topics are discussed in this section:

- [RS-232 Serial Control Setup](#)
- [Ethernet Control Setup](#)
- [Web Control Panel Setup](#)
- [Timing Adjustments](#)

Note

Before applying power, make sure that all cables are connected correctly and that the SuperView 4000-4/4 power switch is in the **OFF** position. With all cables properly connected, turn the SuperView 4000-4/4 **ON**.

RS-232 SERIAL CONTROL SETUP

The RS-232 serial control method uses an ASCII terminal or a PC running a terminal emulation program (such as HyperTerminal or Procomm) to communicate with the SuperView 4000-4/4.

Use the following steps to connect and control via RS-232:

1. Ensure that the SuperView 4000-4/4's RS-232 Serial Port is connected to the COM port of your computer (or other terminal control device), as outlined in the [Installation](#) section.
2. On your PC, launch Hyperterminal by clicking **Start > Programs > Accessories > Communications > Hyperterminal**.

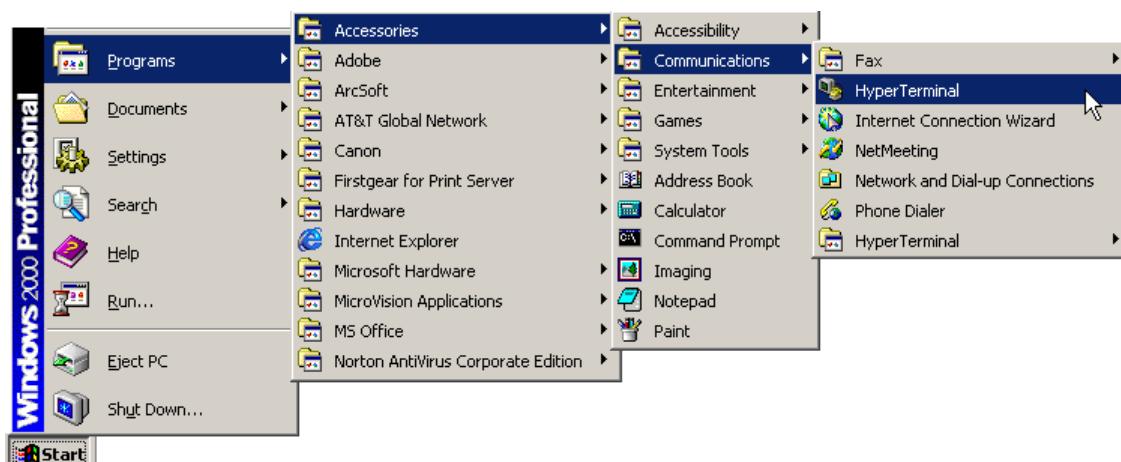


Figure 2-3. Hyperterminal Path

This action displays the **Connection Description Dialog**, a sample of which is shown below.

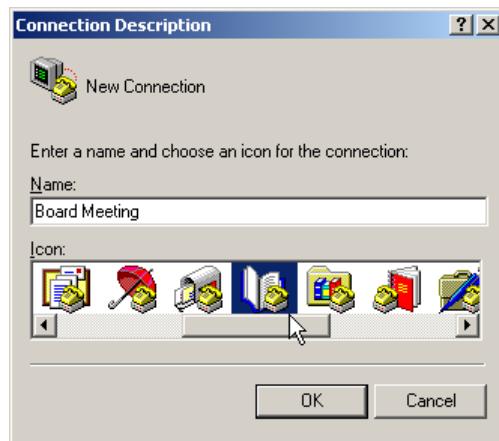


Figure 2-4. Connection Description Dialog (Sample)

3. In the dialog, enter a name, choose an icon and click **OK** to display the **Connect To Dialog**.



Figure 2-5. Connect To Dialog (Sample)

4. In the **Connect To Dialog**, ignore the **Country**, **Area Code** and **Phone Number** fields. In the **Connect Using** field, select your PC's COM port to which the serial cable from SuperView 4000-4/4 is connected.

5. Click **OK** to display the **COM Properties Dialog**.

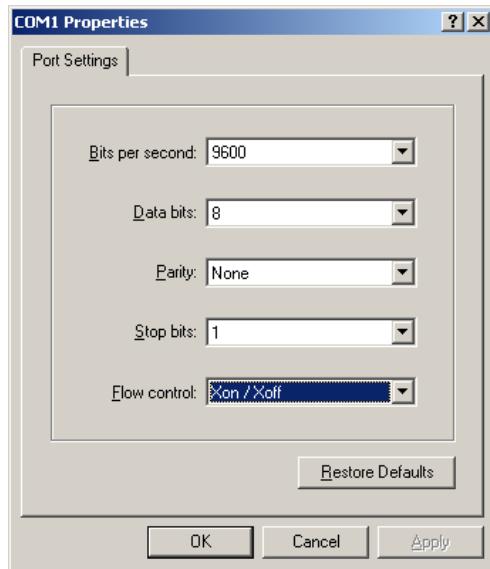


Figure 2-6. COM Properties Dialog (Sample)

6. Configure your PC to match the SuperView 4000-4/4's pre-configured factory settings, as follows:

- ~ Bits per second (baud): **9600**
- ~ Data bits: **8**
- ~ Parity: **None**
- ~ Stop bits: **1**
- ~ Flow control: **XOn / XOff**

SuperView 4000-4/4 can be configured to operate at baud rates from 9600 baud to 115 kbaud. In Chapter 4, refer to the [Serial Port Commands](#) section for details about changing baud rates.

7. Click **OK** to display the Hyperterminal window.
8. Select the phone icon to connect the PC to the SuperView 4000-4/4. (See [Figure 2-7](#)).

9. When the hyperterminal window is open and the connection is enable, press the ENTER key.

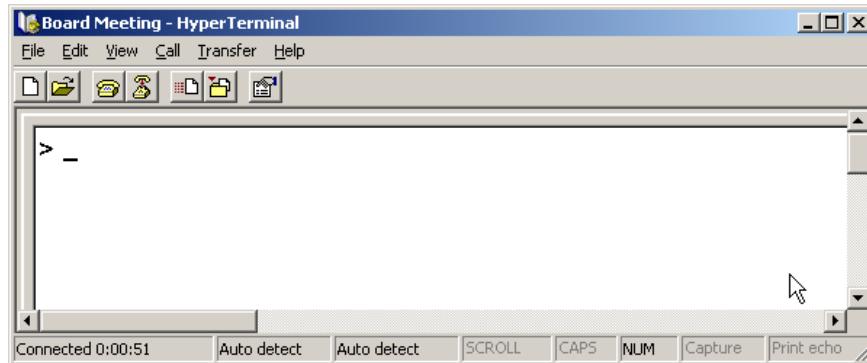


Figure 2-7. Hyperterminal Window (Sample)

Please note:

- ~ If a prompt is displayed in the window (as shown above), your PC is successfully connected to SuperView 4000-4/4.
- ~ If you do not see a prompt (or any characters), there is a connection problem. Refer to Chapter D, [Maintenance and Trouble shooting](#) for basic troubleshooting steps.

10. If a prompt is displayed in the Hyperterminal window, you can test out the system. Type:

HELP

... and press **Enter**.

- ~ If communications have been set up correctly, SuperView 4000-4/4 responds with a list of available commands.
- ~ If SuperView 4000-4/4 does not respond, refer to Chapter D, [Maintenance and Trouble shooting](#).

Refer to Chapter 4, [Command Line Interface](#) for a complete command list.

ETHERNET CONTROL SETUP

The SuperView 4000-4/4 can be controlled using a command line interface via the Ethernet port. This provides the ability to control the device locally (peer to peer) or over a LAN connection. Ethernet control is accomplished from one of two methods:

Telnet Control Telnet control provides a command line interface to the SuperView 4000-4/4 using the 10/100/1000 BaseT network port. Operationally, this interface is almost identical to RS-232 control, but the setup procedure is different. Refer to the [Setting up a Telnet Session via Ethernet](#) (page 18) section for instructions.

Web Control Panel (WCP) This method uses a graphical interface through SuperView 4000-4/4's internal web server, via Ethernet. Refer to the [Web Control Panel Setup](#) (page 20) section for instructions.

When connecting systems via Ethernet, the setup of communications parameters is automatic. However, because this is a *network* connection, a unique address (known as the **IP address**) must be set up.

For proper setup, SuperView 4000-4/4 requires a *fixed* IP address (also known as a static IP address). At the factory, SuperView 4000-4/4 is programmed with a default IP address, but this address must be changed if you want to use your SuperView 4000-4/4 on a network.

Important

Consult your network administrator to obtain a valid IP address before commencing the network setup procedure.

▲ **Recommendation:** If you intend to use SuperView 4000-4/4 directly on a Local Area Network (LAN), change the unit's IP address before putting it on the network. Refer to the [IP Address Setup](#) section later in this chapter for details.

SETTING UP A TELNET SESSION VIA ETHERNET

A telnet session provides the ability to remotely log into a computer. The SuperView 4000-4/4 is provided with an internal telnet server which will work with standard telnet clients. A telnet client is included as a standard item with Windows operating systems.

It is recommended that you set up the SuperView 4000-4/4 by initially connecting *directly* to a PC and *not* connecting via the network. This will avoid potential conflicts between SuperView 4000-4/4's default IP address and your network.

The following procedure assumes that you have this direct connection between PC and SuperView 4000-4/4.

Use the following procedure to start a Telnet session:

1. Use an Ethernet crossover cable to connect directly between the SuperView 4000-4/4's Ethernet port the network port of your PC.
2. Open a web browser window (Internet Explorer recommended) on your PC.
3. Delete your default address in the browser window address line.
4. In the browser address line type:

`telnet://<ipaddress> :8000`

where <ipaddress> represents the current IP address of your SuperView 4000-4/4

▲ Example - Assuming that you have changed the IP address setting of the SuperView 4000-4/4 to the following IP address:

`192.168.1.134`

Assuming the default IP address shown above in your web browser address line type the following:

telnet://192.168.1.134 :8000

... and press **Enter**.

At this point, the telnet terminal window should start and SuperView 4000-4/4 should respond with the product name and copyright notice as shown in the following figure.

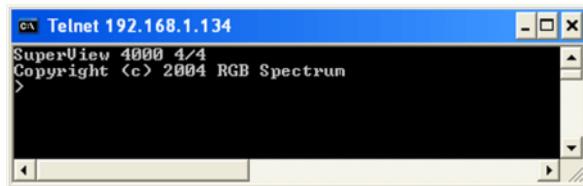


Figure 2-8. SuperView 4000-4/4 Login (Sample)

Note

To close a Telnet session, type **EXIT** or use the keystroke sequence **Control + D**.

IP ADDRESS SETUP

Use the following steps to change the SuperView 4000-4/4's IP address:

1. Connect the SuperView 4000-4/4 using serial ([RS-232 Serial Control Setup](#) page 14) or ethernet ([Ethernet Control Setup](#) page 14) control.
2. With communications established, type:

IPADDR

... and press **Enter**.

SuperView 4000-4/4 should respond with the current IP address. Make a note of the address before proceeding with the next step.

3. Type **IPADDR** followed by a space and the new IP address provided to you by your network administrator.

▲ **Example:** If the new IP address is to be 192.168.100.15, type:

IPADDR 192.168.100.15

... and press **Enter**.

4. SuperView 4000-4/4 should respond with the following message:

The system must be restarted for your changes to take effect. Do you want to restart the system (y/n)?

- ~ Press **y** to restart SuperView 4000-4/4 and use the newly assigned IP address.
- ~ Press **n** to retain the *current* IP address, and discard the new address.

5. Confirm the new setting by typing the command **IPADDR**. If the SuperView 4000-4/4 has accepted the command, it responds with the new IP address that you just entered.

Please note:

- If you will be controlling SuperView 4000-4/4 via Telnet, please continue with the [Timing Adjustments](#) section (page 20).
- If you will be controlling SuperView 4000-4/4 via the system's internal web browser, please refer to the next section and Chapter 3, [Web Control Panel \(WCP\)](#).

WEB CONTROL PANEL SETUP

SuperView 4000-4/4's Web Control Panel (WCP) interface provides a graphical alternative to the command-based setup and control used with serial control. This method uses the SuperView 4000-4/4's internal Web Server, allowing you to set up and operate the system from a standard browser.

▲ Please note the following important recommendations:

- To minimize compatibility issues between browsers, it is recommended that you use the Internet Explorer® web browser.
- To use SuperView 4000-4/4 on your LAN (Local Area Network), ensure that the SuperView 4000-4/4 has an IP address that is compatible with your LAN.
- Changes to the default IP address should be made before putting your SuperView 4000-4/4 on the network. Refer to the [IP Address Setup](#) section (page 19) for complete instructions.
- Connect to the SuperView 4000-4/4 using your web browser by typing the SuperView 4000-4/4 IP address into the browser address box.

▲ Example: If your SuperView 4000-4/4 IP address is 192.168.1.200 type the following into your browser address box:

`http://192.168.1.200`

... and press **Enter**

Refer to Chapter 3, [Operations](#) and Chapter 5, [Advanced Set Up](#) for more information on using the WCP.

TIMING ADJUSTMENTS

For best results, the timing parameters of a signal must match the display device. Please note:

- The SuperView 4000-4/4's output settings should be set to match the display.
- The SuperView 4000-4/4's graphics input settings should match the characteristics of the input signals.

SuperView 4000-4/4 system timing consists of two procedures:

- [Output Timing](#)
- [Input Timing](#)

The output timing procedure should be performed first, followed by the input timing procedure.

OUTPUT TIMING

The **Output Timing** procedure enables you to match the SuperView 4000-4/4's output signal to the graphic display device(s) that you are using. SuperView 4000-4/4 generates a wide range of preset VESA-compliant output formats and also enables users to define custom values.

The overall procedure has three parts:

- Learn the characteristics of your display device.
- Load the required output format using the Output Timing Load function.
- Use your display's controls to center and size the image.

A list of common device signal types that SuperView 4000-4/4 supports can be found in the [Timing Format List](#) in Chapter 4.

Note that SuperView 4000-4/4 can be used with non-standard display devices by entering your own timing parameters. The first 99 entries in the Output Format List are reserved for factory defined entries. Some of the factory entries might not be defined and are reserved for future use.

Timing list entries from 100 to 160 are reserved for user defined entries. The user entry feature is helpful for storing non standard timing information or special applications where a preset timing parameter needs to be adjusted and then stored in a register. In some cases, you may also need to create your own custom timing parameters.

Use the following steps to set up the SuperView 4000-4/4's output timing.

Note

This setup procedure applies to both analog and digital displays.

1. Obtain a copy of your display device's operations manual or technical guide, and make a note of the following important parameters:
 - ~ **Type:** Is the display device a CRT or LCD device?
 - ~ **Format:** Is the display device Analog or Digital?
 - ~ **Resolution:** Note the display device's native horizontal and vertical resolution (e.g., 1600 x 1200).
 - ~ **Refresh rate:** Note the display device's optimum refresh rate (e.g., 60Hz, 75Hz, etc.)
 - ~ **Sync:** For analog devices, note the type of Sync required (5-wire, 4-wire or 3-wire).
 - ~ **Sync polarity:** Note the preferred Sync Polarity (positive or negative).
 - ~ **Interlace:** Most graphics displays are non-interlaced, but interlaced signals are used in some special applications. Note the required interlace setting (interlace or non-interlace) for your display.
2. Review the list of output parameters in the **Output Format List**, and find the set of parameters that *most closely match* those of your display device (as you noted in step 1). Make a note of the reference ID for this set of parameters (column 1 in the Output Format List). This ID will be used in a subsequent step.

In Chapter 4, refer to the [Timing Format List](#) section for a complete list of output timing parameters.

- ▲ **Example:** If your monitor is VESA 800 x 600 @ 75Hz, the reference ID is 11.
- ▲ **Example:** If your monitor is VESA 1280 x 1024 @ 75Hz, the reference ID is 21.

3. Ensure that the following connections have been made:
 - ~ SuperView 4000-4/4 is properly connected to the display monitor(s).
 - ~ The controlling device (such as an ASCII terminal or PC) is properly connected to the SuperView 4000-4/4 either via serial or Ethernet connection.

If required, refer to the [Installation](#) section for instructions.

4. Turn on the SuperView 4000-4/4.
5. Turn on your display monitor.
6. Turn on the controlling device, allowing time for it to boot up.
7. From the PC, establish a serial (or Telnet) connection to SuperView 4000-4/4 (depending upon your configuration).
8. With communications properly established, turn on the color bar test pattern. Type:

TP BARS

... and press **Enter**. Verify that the color bar signal is visible on your display. At this point, however, it may not properly fit your display.

9. Using the **Output Timing Load** function, enter the ID of the timing parameters that you selected in step 2. Type:

OPTMLOAD <1...99>

... and press **Enter**.

10. Adjust the *display* to match SuperView 4000-4/4's output: Note:

- ~ Leave the display's auto-sync circuitry on. Use the display's position and size controls to center the test pattern and ensure that the entire test pattern is completely visible.
- ~ In some special applications, you may choose to change the output parameters of the SuperView 4000-4/4 rather than using the adjustments provided by the display device. In this case you should use SuperView 4000-4/4's **Output Timing Interactive** procedure to match the display settings. Refer to the [Advanced Output Timing](#) section for details.

11. With the display adjusted, adjust the SuperView 4000-4/4's input timing using the **Input Interactive** procedure. Refer to the [Input Timing](#) section (page 24) for instructions.

ADVANCED OUTPUT TIMING

For most applications and timings, the steps outlined in the Output Timing section are adequate for matching SuperView 4000-4/4's output to your display. However, for greater accuracy, you can fine-tune output settings using the **Output Timing Interactive** function.

The interactive mode places a cursor on screen that defines the boundaries of the output signal (also known as the active picture). Unlike other SuperView 4000-4/4 commands, the interactive mode is one that waits for keystrokes to position the picture, while all other commands are locked out. Additionally, users must exit the mode before normal command line interface functions can be issued.

Note

The interactive mode is not available via the WCP Terminal feature. You must use the WCP GUI or command line interface using a Telnet or RS-232 connection.

Use the following steps to adjust output timing interactively:

1. Ensure that you've followed preliminary steps 1 through 8 in the preceding [Output Timing](#) section, and that you have selected color bars as the SuperView 4000-4/4's test pattern output.
2. Begin the interactive output timing procedure. Type:

`OutPutTiMingINTERactive`

or the short form of the command,

`OPTMINT`

... and press **Enter**. A white box and cross hair appear on your output display.

3. Starting with the upper-left corner of the white box, use the keyboard controls listed below to position the top left corner of the box at the top left corner of the display monitor. Note that these adjustment commands are case sensitive.

i = move up
m = move down
j = move left
l = move right

NOTE: all the above are lower case commands.

The goal is to position the upper left corner for maximum image visibility, or for multi-display device configurations, to position the corner to *precisely* match the position of an adjacent display device image.

4. With the upper-left corner properly adjusted, use the keyboard controls listed below to position the bottom right corner of the box at the bottom right corner of the display monitor.

I = move up
M = move down
J = move left
L = move right

NOTE: all the above are upper case commands.

The goal is to position the bottom right corner for maximum visibility, or for multi-monitor configurations, to position the corner to *precisely* match the position of an adjacent monitor image.

5. To exit the function, type:

q

... and press **Enter**.

This returns the system to the normal command mode of operation.

6. Repeat steps 2 through 5. This repetition is necessary to accurately fine-tune the timing parameters.
7. Once the display is adjusted, use the **Output Timing Save** function to save parameters in memory. SuperView 4000-4/4 allows you to save up to ten user defined settings. These settings may then be recalled at any time to quickly change the system's output settings. To save settings in one of 10 available timing slots, type:

`OutPutTiMingSAVE <100...160>`

or the short form,

`OPTMSAVE <100...160>`

... and press **Enter**.

▲ **Example:** To save the timing parameters in register 9, type `OPTMSAVE 9, Enter`.

Every time you turn on the SuperView 4000-4/4's power, the last output setting used will be automatically recalled. Note that if an **RFD** (Return to Factory Default) is performed, your custom settings will be lost and SuperView 4000-4/4 will start with the factory default output settings.

This completes the advanced output timing procedure. Please continue with the **Input Timing** procedure outlined below.

INPUT TIMING

When you connect a graphics signal to a SuperView 4000-4/4 input, the SuperView 4000-4/4's Autosync feature will automatically search for a match between the signal and the list of signal types that it stores internally. This list consists of the combination of standard VESA defined signals and user defined signals.

- If the signal found in the list is an exact match, then no further adjustment is needed.
- If some adjustment is required, then implement the following adjustment procedure and save the new parameters to the user list. In this way, the next time the same signal is connected, no adjustment will be required.

Two command methods are available for adjusting input timing on each of the input windows:

- The **Input Timing** function is an advanced feature that enables you to fine-tune each input by entering exact timing numbers. In Chapter 4, refer to the [Input Commands](#) and [Timing Parameters](#) sections for details.

- The **Input Interactive** function enables you to adjust each input's timing interactively. Note that interactive timing applies only to graphics inputs (not composite video or S-Video sources). This method is described below.

Use the following steps to adjust input timing interactively. The procedure takes you through the complete adjustment for one window (including naming and saving settings), and then asks you to repeat steps for each remaining input (windows 1-4).

Note

The interactive mode is not available via the WCP Terminal feature. You must use the WCP GUI or command line interface using a Telnet or RS-232 connection.

1. Ensure that you have a working serial or telnet connection to SuperView 4000-4/4.
2. To perform interactive input timing, ensure that the desired input sources are connected to the appropriate SuperView 4000-4/4 input connectors. Refer to the [Installation](#) section for instructions.
3. Select the RGB or DVI input type as required for each input using the **Input Source** command.

Type:

`INSRC <input#> [RGB | DVI]`

... and press **Enter**.

Please note the following points regarding the command's arguments:

- ~ When using an RGB graphic input connected to the RGB connector, select the **RGB** argument.
- ~ When using a digital video input connected to the DVI connector, select the **DVI** argument.

▲ **Example:** If a digital (DVI) source is connected to input 2, type `INSRC 2 DVI` and press **Enter**.

4. To begin the input timing procedure, type:

`INputINTeractive <input#>`

or the short form,

`ININT <input#>`

... and press **Enter**. An alignment signal will appear over the selected full screen input.

▲ **Example:** To adjust input 1 interactively, type:

`ININT 1`

5. Starting with the upper-left corner of the image, use the keyboard controls listed below to position the image within the white frame. The goal is to position the corner for maximum image visibility. Note that these adjustment commands are case sensitive.

`i` = move up
`m` = move down
`j` = move left
`l` = move right

NOTE: the above commands are lower case.

6. With the upper-left corner properly adjusted, adjust the lower-right corner next by using these keyboard controls. The goal is to position this corner for maximum image visibility.

`I` = move up
`M` = move down
`J` = move left
`L` = move right

NOTE: the above commands are upper case.

7. To exit the function, type:

`q`

... and press **Enter**.

This returns the system to the normal command mode of operation.

8. Repeat steps 5 through 7 for the selected input. This repetition is necessary to accurately fine-tune the timing parameters.
9. Use the **Input Name** function to name the input source, up to 17 alphanumeric characters in length. Spaces are not allowed in the name, but underscores and upper/lower case characters are OK.

Type:

`INputNAME <input#> <name>`

or the short form,

`INNAME <input#> <name>`

... and press **Enter**.

▲ **Example:** To name input 1 PowerPoint_1, type:

`INNAME 1 PowerPoint_1`

10. Use the **Input Save** function to store the selected input's parameters in one of 61 slots in the Input List. These settings are recalled whenever the signal is reapplied to the SuperView 4000-4/4. Type:

`INputSAVE <input#> <100...160>`

or the short form,

`INSAVE <input#> <100...160>`

... and press **Enter**.

▲ **Example:** To save input 1 in Input List slot 101, type:

`INSAVE 1 101`

This completes the procedure for adjusting, naming and saving the selected input.

11. Repeat steps 4 through 10 for all remaining SuperView 4000-4/4 inputs (windows 1-4).



OPERATIONS

IN THIS CHAPTER

This chapter provides describes how to control the SuperView 4000-4/4. using the Web Control Panel (WCP) graphical user interface. The WCP works with standard web browsers such as the Microsoft Internet Explorer. For information on how to use the Web Control Panel (WCP) for Advanced Set Up of the SuperView 4000-4/4 please refer to Chapter 5, [Advanced Set Up](#) .

WEB CONTROL PANEL (WCP)

CONTROL PANEL ORGANIZATION

The Web Control Panel is a graphical interface that can be used to set up and operate the SuperView 4000-4/4. Because the WCP interface uses a web server internal to the SuperView 4000-4/4 you can use a standard web browser and do not need to load any special SuperView 4000-4/4 software onto your PC.

The WCP consists of a number of floating GUI screens that are accessed from a main screen called the WCP control panel (see Figure 3-1 below).



Figure 3-1. WCP Control Panel

The buttons on the control panel open other GUI screens that are used to access SuperView 4000-4/4 control functions. The organization of these functions is shown in Figure 3-2. A brief description of the functions available under each menu is provided in the following section ([Starting the Web Control Panel](#)).

STARTING THE WEB CONTROL PANEL

To open the WCP, launch a web browser and enter the IP address for the SuperView 4000-4/4 into the browser address line. The default IP address is 192.168.1.200.

When the browser has connected to the SuperView 4000-4/4 the WCP control panel should appear in the browser window (Figure 3-1).

Note

The control panel is a floating GUI screen and it may be obscured by the browser window. If you don't see the control panel, then minimize the browser window or click on the RGB symbol at the bottom of the task bar to bring it to the front of the browser.

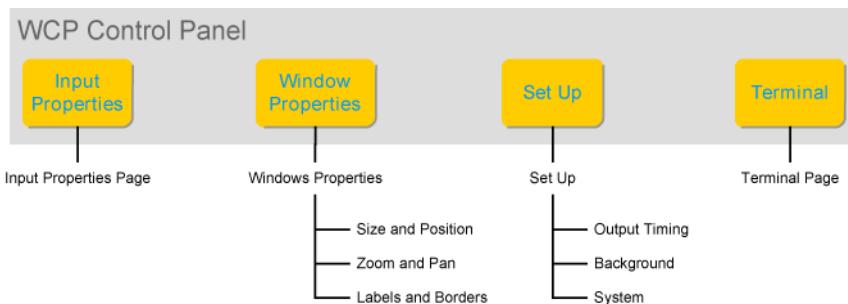


Figure 3-2. WCP Menu selections

Click on the control panel button to access the following functions:

- Input Properties
 - ~ Input timing selection and adjustment
 - ~ Input source selection
 - ~ Image adjustment controls
- Window Properties
 - ~ Window size and position
 - ~ Zoom and Pan
 - ~ Window labels and borders
- Set Up
 - ~ Set Output Timing (format)
 - ~ Set Output Background
 - ~ Set System parameters
- Terminal

The terminal page can capture the list of commands flowing from the WCP to the SuperView 4000-4/4 as well as allow you to enter most commands. For more information on controlling the SuperView 4000-4/4 via command line interface, refer to Chapter 4, [Command Line Interface](#).

VIRTUAL SCREEN PAGE

When you open any GUI screen from the WCP control panel, the Virtual Screen page is automatically launched. This page provides the following functions:

- View of the current window layout
- Interactively move and size individual windows
- Save and Recall window presets

The Virtual Screen page is shown in the following figure.

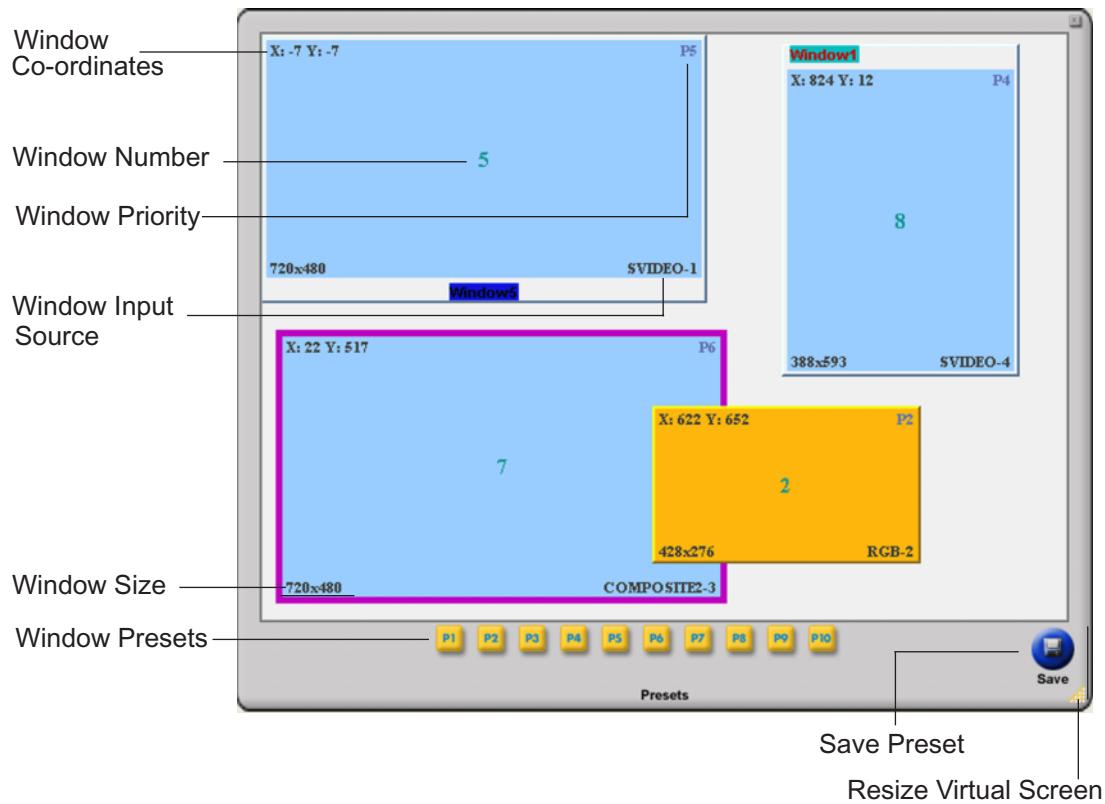


Figure 3-3. WCP Virtual Screen

Each window is displayed in the virtual screen at the same relative size and location as on the SuperView 4000-4/4 output. The window currently under control by the WCP is highlighted in yellow/orange. To control a different window, left click in the window desired and the window will be highlighted.

Hint

If one or more windows do not appear on the output (or virtual screen) check that the window is enabled (see [Window Enable](#) page 34) and is not obscured by another higher priority window ([Window Priority and Overlapped windows](#) page 34).

SETTING WINDOW
POSITION AND SIZE

Setting size and position of any window on the display screen using the Virtual Screen page is a simple click and drag operation. To move a window, position the PC cursor over the window (Figure 3-3), left click and drag the window to the new position.

To size a window click and grab the edge of the picture and drag to stretch or shrink the picture. Grab a vertical edge to change the width of the picture, or grab the horizontal edge to change the height of the window. To change the size without changing the current aspect ratio grab the corner of the image and stretch or shrink the image as needed.

To move a window that is behind another window, it is necessary to disable the window at the front. Use the Window Enable control ([page 34](#)) to turn off a window that is obscuring a lower priority window.

RESETTING
WINDOW SIZE

WCP provides a convenient means to restore a window size to its unscaled (native) size. For example if the input signal has a resolution of 1024 x 768, you can set the window size to 1024 x 768 by selecting the **Snap to original resolution** option from the WCP virtual screen page.

Using the mouse, right click on the window that you wish to size to the native resolution. A pop up window should be displayed as shown in the figure below.

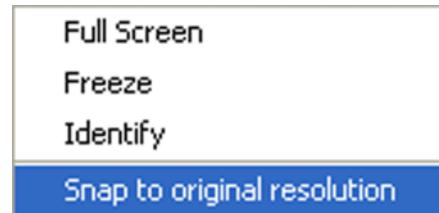


Figure 3-4. WCP Snap to Original Size control

Select the **Snap to original resolution** item to reset the window size to turn off scaling and display the image at its original resolution.

MAKING A WINDOW
FULL SIZE

Any window can be set to automatically to display full screen. There are two quick methods that can be used to automatically perform this operation.

- 1) Double click in the window that you wish to make full size
- 2) Right click in the desired window and select the **Full Screen** option.

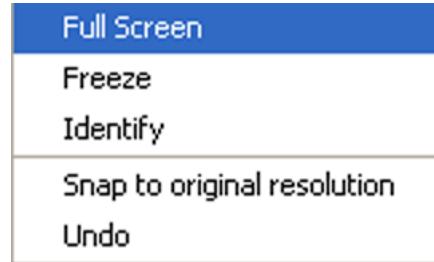


Figure 3-5. WCP Full Screen control

To return from a full screen display to the previous arrangement of windows, right click in the full screen window and select the **Undo** function.

FREEZING A
WINDOW

WCP provides a means to freeze the contents of any window.

To freeze a specific window, right click inside the desired window and select the **Freeze** option. To unfreeze a window, right click in the window and click on the **Freeze** option to uncheck the **Freeze** function. See Figure 3-5 above.

WINDOW ADJUSTMENTS

The **Virtual Screen** drag and drop method provides a quick and easy way to size and move windows. However a more precise method is provided by using the **Window Control Panel**.

This section describes the use of the **Window Control Panel** and also the **Input Properties** page which provides adjustment of window input source and image properties in addition to timing adjustments.

SELECTING A WINDOW INPUT

Windows 1 through 4 support graphics inputs and windows 5 through 8 support video inputs. Input source types not available with specific windows are grayed out in the **Source** selection area of the **Input Properties** page. The top portion of this page contains the input selection (**Source**) section of the page as shown in Figure 3-6. The currently selected window is indicated by the highlighted (yellow) **Selected Window** button.

Use the following procedure to select a window input source:

- From the SuperView 4000-4/4 Control Panel screen click on the **Input Properties** button
- Select the window whose source you wish to change by clicking on the appropriate **Selected Window** button
- Click the **Source** radio button for the desired input type

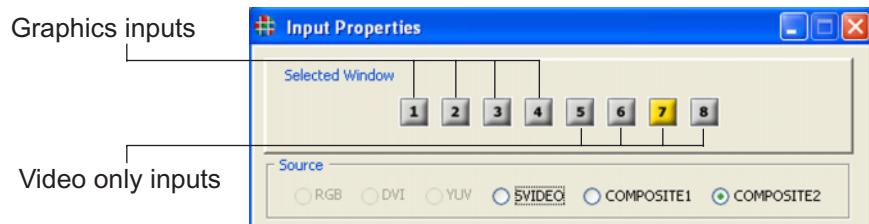


Figure 3-6. WCP Input Properties (Input Selection)

Note

When any input 1 through 4 is selected only graphics source types are available for selection.

When any input 5 through 8 are selected only video signal types are available for selection.

SETTING WINDOW SIZE & POSITION

In addition to changing size and position using the Virtual Screen page (see [Virtual Screen Page](#) on page 29), the size and position of windows can be adjusted using the Window Control, **Size and Position** page as shown in Figure 3-7.

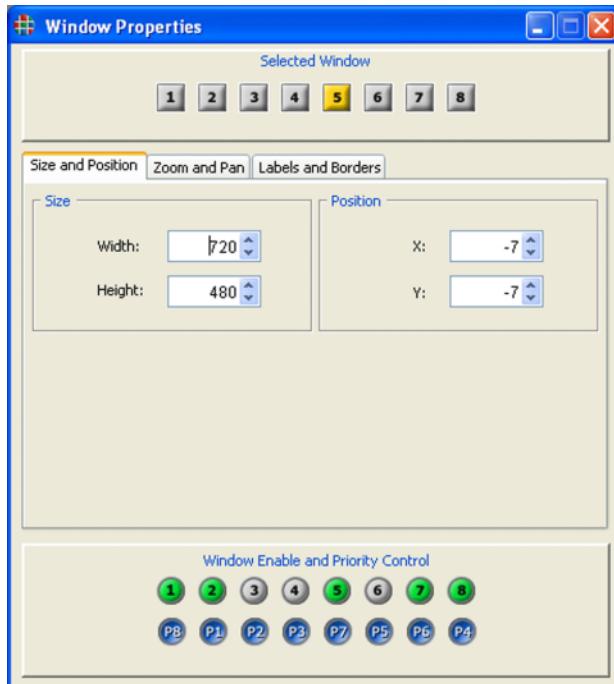


Figure 3-7. WCP Window Properties page — Size and Position

To set the size and position of a window use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Click on the **Size and Position** Tab on the **Windows Properties** page (Figure 3-7).
- Select the desired window using the **Selected Window** buttons at the top of the **Size and Position** page.
- Use the **Width** and **Height** size spin boxes to set the width and height of the window as required.
Note that you can directly enter the numeric values directly into the spin box. Complete the entry by pressing the keyboard **ENTER** key.
- To set the position use the **Position X** and **Y** spin boxes as required.
Note that you can directly enter the numeric values directly into the spin box. Complete the entry by pressing the keyboard **ENTER** key.

WINDOW ENABLE

Up to eight windows can be displayed at a time.

Individual windows can be turned ON or OFF using the **Window Enable** buttons at the bottom of any of the **Window Properties** pages. An active (enabled) window is indicated by the green button color. Click on the desired window button to change the state from ON to OFF or OFF to ON.

**WINDOW PRIORITY
AND OVERLAPPED
WINDOWS**

Windows may be positioned anywhere over the display and can be placed to overlap other windows. When windows overlap they are layered in order of a user defined priority. The window that appears on the top of all other windows has the highest priority level (priority level 1). To set the priority level of a window, use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Move the cursor to the **Window Enable and Priority Control** area at the bottom of the page (Figure 3-7).
- Position the cursor over the **Priority** button that you wish to assign to the window whose priority you wish to change and click and drag the button over the top of the **Priority** button that you are prioritizing. The **Priority** buttons are the blue buttons immediately below the **Window Enable** buttons.
- Release the mouse button to drop the **Priority** button on top of the **Priority** button for the appropriate window to complete the setting.

Note that when you change the priority of a window, the priority of other windows may be affected. For example if Window #3 currently has the priority level 3, then promoting the window to have a priority level of 2 will demote the priority of all the windows from 2 down to 4.

ZOOMING & PAN
WITHIN A WINDOW

The image within each window can be zoomed and panned within the window. Zoom and Pan are applied to each window independently.

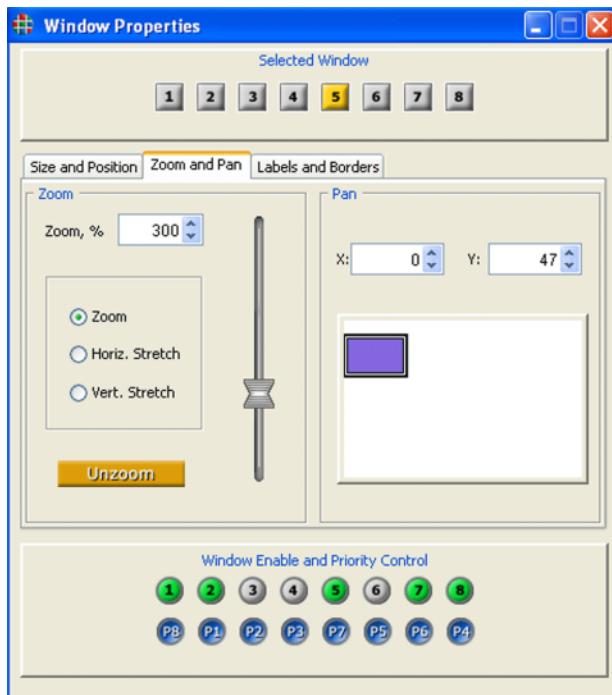


Figure 3-8. WCP Zoom and Pan page

SETTING THE ZOOM LEVEL

Zoom may be applied to the image without affecting the aspect ratio of the image, or can be applied independently to stretch the image in either the vertical or horizontal dimensions. Additionally, both interactive adjustment and numeric entry methods are supported. To zoom using the interactive method use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Click on the **Zoom and Pan** tab on the **Windows Properties** page (Figure 3-8).
- Use the **Selected Window** area to select the window that you wish to use by clicking on the desired **Selected Window** button.
- Position the cursor into the **Zoom** pane.
- Click and drag the vertical slider to interactively control the zoom.
OR
- Enter the required zoom factor into the zoom entry window.

If you wish to reset the zoom so that it is fully zoomed out click on the **Unzoom** button at the bottom of the **Zoom** pane.

The **Zoom** control may also be used to stretch the image vertically or horizontally within the window. Check the **Horiz. Stretch** or **Vert. Stretch** radio buttons as required and use the **Zoom** control in the same way as described in the previous section.

PANNING WITHIN A WINDOW

When an image is zoomed inside of a window, the image may be panned around inside the window. This may be accomplished interactively or numerically by entering X and Y position into the pan numeric entry buttons.

Note

Set the zoom factor first before panning inside the window.
An image that is unzoomed cannot be panned inside the window.

To pan using the interactive method use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button
- Click on the **Zoom and Pan** tab on the **Windows Properties** page (Figure 3-8). Use the **Selected Window** area to select the window that you wish to use by clicking on the **Selected Window** button.
- Position the cursor into the **Pan** pan.
- Click and drag the colored box inside the **Pan** pane to move the image inside the window

OR

- Enter the required X and Y co-ordinates into the **Pan X** and **Pan Y** entry windows.

WINDOW BORDERS

A colored border may be applied around each window by using the **Labels and Borders** page of the Windows Control Panel.

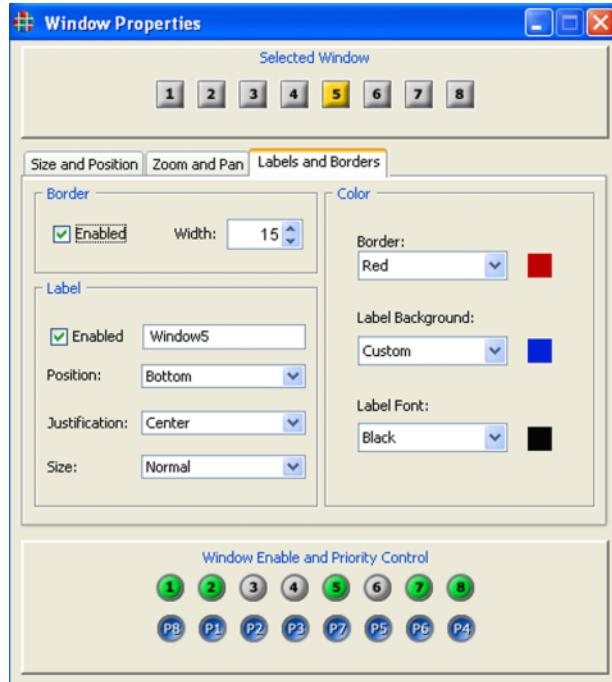


Figure 3-9. WCP Labels and Borders page

To set up a border around a window use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button
- Select the **Window Label and Borders** tab (Figure 3-9)
- Set the border width as required using the **Width** spin box control or enter the value directly into the spin box
- Click the **Border Enabled** check box to turn on the border

Note

You must set a value greater than zero in the border width box before checking the **Border Enable** box.

To change the border color around a window use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Select the **Window Label and Borders** tab (Figure 3-9).
- Select a pre-defined color from the Border Color drop down selector OR
- Click on the colored swatch to the right of the Border Color drop down selector to access the color chooser window.
- Select the desired color.
- Click the **OK** button or cancel if you do not want to change the color.

WINDOW LABELS

A label may be applied to each window independently by using the **Windows Labels and Borders** page of the Windows Control Panel. Use the following procedure to enter a label text:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Select the **Window Label and Borders** tab (Figure 3-9).
- Select the desired window using the associated **Selected Window** button.
- Enter the label text into the **Label** entry box. The label may be up to 23 characters in length and may consist of any readable ASCII characters except for spaces (use _ instead of spaces).
- Click the **Label Enabled** check box.

The label may be positioned above or below the window. You may also choose to position in the center, or justified to the left or right edge of the window. To change the position use the following procedure:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Select the **Window Label and Borders** tab (Figure 3-9).
- Select the desired window using the associated **Selected Window** button.
- Use the **Position** drop down selector to choose Top or Bottom position as required.
- Use the **Justification** drop down selector to choose Left, Center, or Right position as required.

Use the following procedure to select the font size:

- Click on the WCP control panel (Figure 3-1) **Window Properties** button.
- Select the **Window Label and Borders** tab (Figure 3-9).
- Select the desired window using the associated **Selected Window** button.
- Use the **Size** drop down selector to choose between Normal Large font size as required.

WINDOW PRESETS

The current setting of windows including position, size, borders and labels can be stored in any of ten (10) **Window Preset** registers. These are stored in non-volatile memory so that you can recall them at any time without fear of losing them due to loss of power. When the power is restored, the **Window Presets** will be available for you to recall all the favorite settings that you have stored.

The Windows Preset controls are located at the bottom of the Virtual Screen page (Figure 3-10)



Figure 3-10. WCP Window Preset controls

To save the Window settings to a **Window Preset** register use the following procedure:

- Make all the window settings that you require using the procedures detailed in previous sections.
- Click the **Save** button at the bottom right of the Virtual Screen page.
- Click the **Preset** button that you wish to use to save your current settings into.
- A Preset Name dialog box will appear inviting you to name the Preset. You cannot enter spaces in the Preset name. However you can enter a character if desired.

Enter a name and click **OK**. Or you can click **Cancel** to leave the preset unnamed.

To recall the Window settings from a Window Preset register use the following procedure:

- Click the Preset button that you wish to recall your settings from. If the Preset contains window settings it will be recalled immediately. There will be no action if the Preset is empty.

BACKGROUND SELECTION

SuperView 4000-4/4 provides a choice of background colors that are displayed behind the windows. Selection of background type is accomplished from the **Setup Menu**.

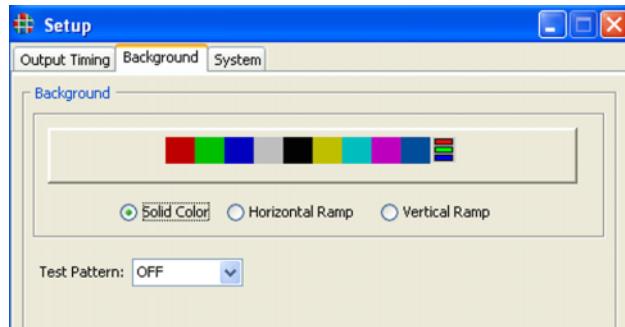


Figure 3-11. WCP Background page

Backgrounds may be either a solid color or shaded from top to bottom or left to right.

SELECTING A SOLID COLOR BACKGROUND

You have the choice of selecting either a pre-defined color background, or a custom color background. Use the following procedure to select a pre-defined background color:

- Click on the WCP control panel (Figure 3-1) **Set Up** button.
- Select the **Background** tab (Figure 3-11).
- Click the **Solid Color** radio button.
- Choose a color:
 - ~ To choose a standard color, click on the colored button desired to choose the background color.

OR

Use the following procedure to select a custom color:

- ~ Click on the Custom Color Selector button (Figure 3-12) at the right end of the row of colored buttons.

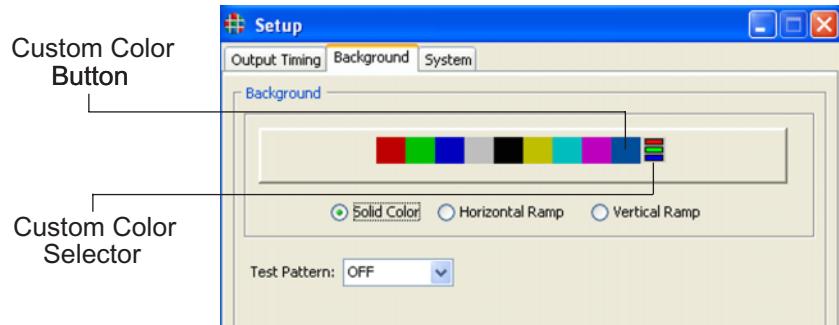


Figure 3-12. WCP Background Custom Color Buttons

- ~ Use the pop-up color entry dialog box that appears to set the background color.

Note:

If you make changes to the current custom color and want to go back to the original custom color before you made the changes, press **Reset**.

- ~ Click **OK** to accept the new color or **Cancel** to continue with the current setting.
- ~ To make the custom color active, click on the **Custom Color** button (Figure 3-12) to the left of the Custom Color Selector (multi-colored) button.

Each time you change the custom color you must click the **Custom Color** button to update the color.

**SELECTING A
SHADED COLOR
BACKGROUND**

In addition to the choice of color you can also choose a color background that is shaded horizontally or vertically. Use the following procedure to select a shaded (ramped) background color:

- Click on the WCP control panel (Figure 3-1) **Set Up** button
- Select the **Background** page tab (Figure 3-11)
- Select the type of shaded background
 - ~ Click the **Horizontal Ramp** button to select a background that is shaded from left to right
 - OR
 - ~ Click the **Vertical Ramp** button to select a background that is shaded from top to bottom

COMMAND LINE INTERFACE

This chapter discusses SuperView 4000-4/4 control commands that provide access to all of the unit's functions. The following topics are discussed:

- [Control Overview](#)
- [Command Format](#)
- [Command Set](#)
- [Timing Parameters](#)
- [Timing Format List](#)

CONTROL OVERVIEW

SuperView 4000-4/4 may be controlled externally via RS-232, or via the unit's Ethernet 10/100/1000 BASE-T port, as shown below.

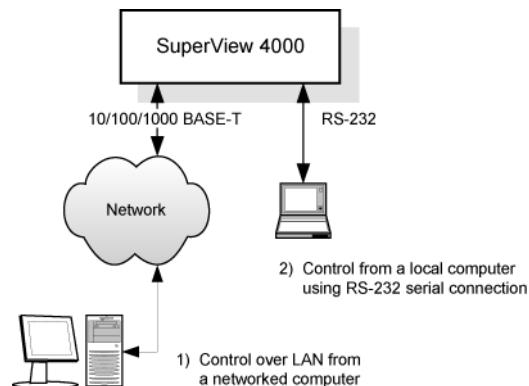


Figure 4-1. SuperView 4000-4/4 Control Methods

SuperView 4000-4/4's **Command Set** provides full system control, and with few exceptions, all commands can be issued using either the serial port or the Ethernet port (using a Telnet-like session). The Web Control Panel (WCP) interface includes quick access to most of the control commands with the exception of the interactive commands. These and other exceptions are noted in the command descriptions covered later in this section. Remember that control via Ethernet requires a connection using the SuperView 4000-4/4's IP address. In Chapter 2, refer to the [Ethernet Control Setup](#) section for instructions.

COMMAND LINE USAGE

COMMAND FORMAT

All SuperView 4000-4/4 control functions are issued via ASCII commands that are used to set one or more system parameters (or values). Typically, SuperView 4000-4/4 is controlled by a third party machine such as a PC or laptop.

COMMAND LINE USAGE

All commands take the following form:

`COMMAND NAME <value1> <value2>...`

... and press **Enter**.

Parameter values are shown in angle brackets `<>`. In the above example, `value1`, `value2` (etc.) are *required* parameters specific to the stated command.

▲ **Example:** Set SuperView 4000-4/4's baud rate to 9600 bps:

`BAUDRATE 9600`

The majority of commands have both long and short forms:

- The long form version is an easily understood word (or the concatenation of two or more words).
- The short form version is a brief, one to seven letter abbreviation of the command.

Note

With the exception of several interactive functions, commands are not case sensitive. In the **Command Set List**, upper case characters in the long form version indicate the letters required for the short form version.

In the example above, the command **BAUDrate** could be entered four different ways:

`BAUDRATE`
`baudrate`
`BAUD`
`baud`



To execute commands, each command line must be followed by a carriage return (pressing **Enter**).

COMMAND HELP

▲ Commands: [Help](#)

There are two primary ways to use the SuperView 4000-4/4's help feature:

- Type **HELP** to list all SuperView 4000-4/4 commands.
- Type **HELP** followed by the command to get command-specific help.

▲ **Example:** Type **H BRI** to get help on the **Brightness** function.

▲ **Example:** Type **H WSR** to get help on the **Window Source Rectangle** function

PREDEFINED PARAMETER VALUES	Some commands have predefined values, and only these may be used as parameter choices. Predefined parameter choices are indicated as <code><value1 value2 value3></code> ▲ Example: The choices for BAUDrate are: <code><9600 19200 38400 57600 115200></code>
QUERY THE CURRENT SETTING	When a command is entered without any parameters, SuperView 4000-4/4 reports back the current settings of the selected parameter. ▲ Example: What is the current baud rate setting ?: <code>BAUDrate</code> would return: <code>9600</code>
PARAMETER RANGES	Parameter values may be a range of values or a defined set of choices (as described above in the Predefined Parameter Values section). Ranges are indicated as: <code><value1...value2></code> ▲ Example: The value of BRIGHT is a range of <code><-500...500></code>
ADDRESSABLE COMMANDS	Commands such as BAUDrate do not need an explicit address, as the SuperView 4000-4/4 has only a single serial port. However, other commands can be applied to several destinations. For example the brightness command can apply to all SuperView 4000-4/4 inputs or to an individual input depending upon how the command sequence is structured. An individual destination is indicated by the parameter such as <input#> , and is typically the first parameter following the command name. ▲ Example: Set window #1's brightness value to 50: <code>BRIGHT 1 50</code> Many commands allow the use of the optional modifier ALL which enables you to set all applicable destinations with one command. The command parameter will then be indicated in the following form: <code><window# ALL></code> The ALL modifier is useful for setting all input channels to the same value. ▲ Example: Set the brightness value of all windows to 0: <code>BRIGHT ALL 0</code>

**OPTIONAL
PARAMETERS**

Some commands have optional parameter values that are *not required* in a command. These discretionary values are indicated by square brackets []:

`COMMAND <value> [<value2>]`

`VideoAspect` is a command with optional parameters. In this example, `<value>` is a required parameter and `[<value2>]` is optional:

`VideoAspectRatio <input #> [NORMAL | WS1 | WS2 | WS3 | WS4]`

In this case, the command may be used to query the `VideoAspectRatio` settings by using only the window #.

COMMAND SET

The following sections list all commands for controlling the SuperView 4000-4/4. Commands are arranged according to categories:

- [Input Commands](#)
- [Output Commands](#)
- [Window Commands](#)
- [Image Control Commands](#)
- [Serial Port Commands](#)
- [Network Commands](#)
- [Miscellaneous Commands](#)

Note

It is recommended that you take the time to review each of these lists, trying as many commands as possible with your SuperView 4000-4/4. In that way, you will quickly become familiar with the machine's full capabilities, in addition to improving your operational skill.

COMMAND LIST

This section provides a hyperlinked index of all SuperView 4000-4/4 commands in alphabetical order. Click the hyperlink to go directly to a detailed description of the associated command.

Table 4-1. SuperView 4000-4/4 Command Index

BackGroundSouRCe	BAUDrate
BRight	CONTrast
ECHO	FReeZe
FullScreen	GAMma
HANDShaking	Help
HOSTNAME	INputAutoSync
INputFormat	INputINTeractive
INputLOAD	INputNAME
INputPHASE	INputSAVE
INputSouRCe	INputTiMing
IPADDReSS	IPSubNET
MACADDReSS	OutPutENable
OutPutTiMing	OutPutTiMing INTeractive
OutPutTiMingLOAD	OutPutTiMingNAME
OutPutTiMingSAVE	OVerScan
PAN	POSition
PRIority	RECALLCONFIGuration
RestoreFactoryDefaults	SATuration
SAVECONFIGuration	SETRATE
SETTINGSEXPORT	SETTINGSIMPORT
SHARPness	SIZE
SYStemINFO	SYStemReSeT
TestPattern	TiMingDElete
TiMingLIST	TiMingLISTCLEAR
TiMingLISTLOAD	UNDerScan
UNZOOM	UpdateFirmWare
VERsion	VideoAspectRatio

Table 4-1. SuperView 4000-4/4 Command Index

<u>VideoInterlaceFiLteR</u>	<u>WindowBorderCOLOR</u>
<u>WindowBorderWIDTH</u>	<u>WindowDestinationRectangle</u>
<u>WINdowENable</u>	<u>WINdowIDentify</u>
<u>WindowLabelBackGroundCOLOR</u>	<u>WindowLabelCOLOR</u>
<u>WindowLabelENable</u>	<u>WindowLabelJUSTification</u>
<u>WindowLabelNAME</u>	<u>WindowLabelPOSITION</u>
<u>WindowLabelSIZE</u>	<u>WindowPresetDElete</u>
<u>WindowPresetLIST</u>	<u>WindowPresetLISTCLEAR</u>
<u>WindowPresetLOAD</u>	<u>WindowPresetNAME</u>
<u>WindowPresetSAVE</u>	<u>WindowSource Rectangle</u>
<u>ZooM</u>	

INPUT COMMANDS

Input commands allow you to make input signal adjustments, and then save these settings into the unit's internal memory. A summary of input commands is listed below. Click the desired command to access detailed instructions.

Table 4-2. Input Commands Summary

Command	Description
<u>IInputAutoSync</u>	Sets the sync mode for the specified input channels
<u>IInputFormat</u>	Checks the signal format of the current input selection.
<u>IInputINTeractive</u>	Enters input interactive mode to visually adjust specified input's timing parameters.
<u>IInputLOAD</u>	Loads the indicated entry from the Input List to the specified input channel.
<u>IInputNAME</u>	Names the specified input.
<u>IInputPHASE</u>	Adjusts the phase of the Analog/Digital Converter to optimize picture quality.
<u>IInputSAVE</u>	Saves the specified input to the selected entry in the Input List.
<u>IInputSouRCe</u>	Selects the analog or digital graphics source for the specified window.
<u>IInputTiMing</u>	Sets the selected input's timing.
<u>TiMingLIST</u>	Displays the entire Timing List of saved input timings.
<u>TiMingLISTCLEAR</u>	Deletes all user defined input timing sets.
<u>TiMingDElete</u>	Deletes the specified entry from the Timing List.
<u>TiMingLISTLOAD</u>	Loads a complete set of timing parameters to the specified timing list entry.

Refer to the [Input Commands Descriptions](#) section for a complete description of all input commands.

INPUT COMMANDS DESCRIPTIONS

The table below lists all input signal commands, their arguments and detailed descriptions. Note that many timing commands apply only to the graphics inputs 1-4. Video inputs 5-8 have few timing commands.

Table 4-3. Input Commands Descriptions

Command	Arguments	Description
I nput A uto S ync	<input 1...4 ALL> [AUTO LOCK DEBUG]	<p>Sets the sync mode for the specified input. Auto enables the autosync circuitry. Lock disables the autosync circuitry.</p> <p>When Autosync is enabled (AUTO active), the current WSR settings are automatically reset to full size when the input signal is re synchronized</p> <p>When Autosync is disabled (LOCK active), the WSR settings are retained even with a loss of the input signal.</p> <p>Debug provides information on input status and reports changes to measured parameters.</p> <p>Default: Auto</p>
I nput F ormat	<input 1...8#>	Reports the signal format of the current input selection. For inputs 5-8 the response will be NTSC or PAL.
I nput IN Teractive	<input 1...4>	<p>Note: this command is not available via the WCP terminal.</p> <p>Enters input interactive mode to visually adjust specified input's timing parameters. A white box and cross hair appear over the full screen input. This command applies to graphics inputs only (inputs 1-4).</p> <p>Starting with the upper-left corner of the image, use these keyboard controls to position the image within the white frame (these are case sensitive):</p> <ul style="list-style-type: none"> i = move up m = move down j = move left l = move right <p>With the upper-left corner properly adjusted, address the lower-right corner next by using these keyboard controls (these are case sensitive):</p> <ul style="list-style-type: none"> I = move up M = move down J = move left L = move right <p>With the image properly adjusted, quit the utility:</p> <ul style="list-style-type: none"> q = quit <p>After you have adjusted the input to your satisfaction, use the Input Name command to name your input source, and the Input Save command to store the setting to the Input List.</p>

Table 4-3. Input Commands Descriptions (continued)

Command	Arguments	Description
INputLOAD	<input 1...4> <1 160>	Loads the indicated entry from the Timing List to the specified input channel. Timing list entries from 1 to 99 are reserved for factory defined timing parameters. Entries from 100 to 160 are available for user defined timing entries. The entry is loaded only if it matches the measured signal parameters sync format and polarity, interlace state, vertical total, and horizontal frequency.
INputNAME	<input 1...4> <name>	Names the specified input. This name is applied to the Timing List when the INputSAVE command is used. The argument can be up to 23 alphanumeric characters with no spaces (use underscore for space). Default: Auto_1
INputPHASE	<input 1...4>[0...31]	Adjusts the phase of the Analog/Digital Converter to optimize picture quality. Applies to Analog RGB inputs only. Default: 24
INputSAVE	<input 1...4> <100 160>	This command applies to graphics inputs only. Saves the input timing parameters for the specified input to the selected entry in the Input List. Whenever a signal is applied to the graphics input the signal parameters are measured and compared to entries in the list. When a match is found it is applied to the SuperView 4000-4/4.
INputSouRCe	<input 1...4> [RGB DVI YUV]	Selects the source for the specified graphics window (1-4). Default: RGB
INputSouRCe	<input 5...8> [COMPOSITE1 COMPOSITE2 SVIDEO]	Selects the source for the specified video window (5-8). Default: Composite 1

Table 4-3. Input Commands Descriptions (continued)

Command	Arguments	Description
INputTiMing	<input 1...4> [<hfp> <hs> <hbp> <hact> <vfp> <vs> <vbp> <vact>] [HFP HS HBP HACT VFP VS VBP VACT] [value]	<p>Defines the active area of the input signal and the selected input's timing. Using this command, the user can set all timing parameters as query or set the value of an individual parameter. For example to query the value of vertical sync width issue the command INTM VS'.</p> <p>Horizontally, the active part of the signal is <hact>. The inactive part (h blanking) is <hfp> + <hs> + <hbp>. The total number of pixels horizontally is htotal = (h blanking) + <hact>. Note that the pixel clock frequency = hfreq x htotal so changing the total horizontal pixel count (htotal) will directly change the frequency of the sample clock.</p> <p>The active part of the vertical component of the signal is <vact>. The inactive part (v blanking) is <vfp> + <vs> + <vbp>. The total number of lines is vtotal = (v blanking) + <vact>. Since SuperView 4000-4/4 knows the total line count an error will result if the sum of the active and inactive parts entered in the command do not match the measured total line count.</p> <p>Refer to the Timing Parameters section for details on timing parameters.</p>
TiMingLIST	[<1 160> [<1 160>]] [ACTIVE]	Displays the entire Timing List. If arguments are supplied, displays only the portion of the list requested. The Active argument displays all saved list entries.
TiMingLISTCLEAR	none	Deletes all user defined input timing sets. This does not affect the factory specified timing entries 1...99

Table 4-3. Input Commands Descriptions (continued)

Command	Arguments	Description
TiMingDEDelete	<100 160>	Deletes the specified timing list entry. Timing list entries 1...99 are reserved for factory specified timing and may not be deleted.
TiMingLISTLOAD	<100 160> <name> <hfp> <hs> <hbp> <hact> <vfp> <vs> <vbp> <vact> <hfreq> <sync> <hpol> <vpol> <i1>	<p>Provides the ability for a user to completely define an input signal. This does not require an input signal to be present to do so. <code>TimingListLoad</code> could be used to enter the list entries one by one.</p> <ul style="list-style-type: none"> • The first argument, <100 160> indicates the Timing List entry number in which to store the timing string. • The second argument, <name>, gives a customized name to the signal. • The next eight arguments, <hfp> <hs> <hbp> <hact> <vfp> <vs> <vbp> <vact>, define the signal's timing. • The next five arguments, <hfreq> <sync> <hpol> <vpol> <i1>, define the horizontal frequency, sync format and polarity, and interlace status. <p>All 15 arguments must be supplied for the command to be successful. Refer to the Timing Parameters section for details.</p>

**OUTPUT
COMMANDS**

Output commands control the SuperView 4000-4/4's output. They define the output timing and sync format, and save, load, and delete timings to the Output List. A summary of output commands is listed below. Click the desired command to access detailed instructions.

Table 4-4. Output Commands Summary

Command	Description
<u>OutPutENable</u>	Switch or fade the output to or from black.
<u>OutPutREFerence</u>	Selects the output's timing reference.
<u>OutPutTiMing</u>	Sets the output timing by parameter.
<u>OutPutTiMing INTeractive</u>	Enters the output interactive timing adjustment mode.
<u>OutPutTiMingLOAD</u>	Sets output display parameters from values stored in Output Timing List.
<u>OutPutTiMingNAME</u>	Assigns a user-defined name to the Output Timing List entry in use.
<u>OutPutTiMingSAVE</u>	Saves the current output timing settings to the specified user timing slot.

Refer to the [Output Commands Descriptions](#) section for a complete description of all output commands.

OUTPUT COMMANDS DESCRIPTIONS

The table below lists all output commands, their arguments and detailed descriptions.

Table 4-5. Output Commands Descriptions

Command	Arguments	Description
OutPutENable	[ON OFF] <duration>	Enables or disables the output signal by fading the output to or from black. The fade duration (in seconds) can be specified. If no duration is specified, the fade is instantaneous (0 duration). Default: ON, duration = 1.0
OutPutREFerence	[INT EDID]	Selects the output's timing reference. <ul style="list-style-type: none"> When INT is selected, the output is locked to an internally generated clock (also known as Free Run mode). When EDID is selected, the device will automatically load the output timing parameters to match the preferred resolution of the attached display (DVI output only). Default: INT
OutPutTiMing	[<hfp> <hs> <hbp> <hact> <vfp> <vs> <vbp> <vact> [<hfreq> <sync> <hpol> <vpol> <il>]] [HFP HS HBP HACT VFP VS VBP VACT HFREQ SYNC HPOL VPOL IL] [value]]]	This advanced mode sets the output timing by parameter. The command supports the ability to set all parameters at once, or the ability to set (or query) the status of individual parameters. Refer to the Timing Parameters section for details on all timing parameters.

Table 4-5. Output Commands Descriptions (continued)

Command	Arguments	Description
OutPutTiMing INTeractive Note: this command is not available via the WCP terminal.	none	<p>Enters the output interactive adjustment mode, enabling you to optimize the output timing values to better suit your display. Once in the interactive mode, a white box and cross hair appear on the output display.</p> <p>Starting with the upper-left corner of the box, use these keyboard controls (these are case sensitive):</p> <ul style="list-style-type: none"> i = move up m = move down j = move left l = move right <p>With the upper-left corner properly adjusted, address the lower-right corner next by using these keyboard controls (these are case sensitive):</p> <ul style="list-style-type: none"> I = move up M = move down J = move left L = move right <p>With the image properly adjusted, quit the utility:</p> <p>q = quit</p>
OutPutTiMingLOAD	<1...160>	Sets the output display parameters from values stored in the specified Output Timing List. Note that timing list entries 1..99 are reserved for factory defined timing parameters. Entries 100 ..160 are user-defined. Refer to the Timing Format List for details on all entries and timings.
OutPutTiMingNAME	[name]	<p>Assigns a user-defined name to the Timing List entry currently in use. The name will be applied to the list when the OutPutTiMingSAVE command is used.</p> <p>The name text string can be up to 23 alphanumeric characters with no spaces (use underscore in place of a space).</p>
OutPutTiMingSAVE	<100...160>	Saves the current output timing settings to the specified user timing slot. If you wish to name the entry in the list use the OutPutTiMingNAME command prior to executing this command.

WINDOW
COMMANDS

Window commands cover positioning and visibility functions, and enable you to control the display configuration, zoom and pan operations, freezing inputs and more. A summary of commands is listed below. Click the desired command to access detailed instructions.

Table 4-6. Window Commands Summary

Command	Description
FReeZe	Turns freeze status of the selected input on or off.
FULLSCREEN	Sets the selected input to a full screen display.
OVERSCAN	Performs an automatic 2% enlargement on video inputs only.
PAN	Activates the pan utility for the selected input.
POSITION	Allows you to move an input window around the output display.
PRIORITY	Set which windows are in front of, and in back of other windows.
RESETSOURCErectangle	Resets source rectangle to default values.
SETRATE	Sets the amount that a window moves with the POSITION command.
SIZE	Activates size utility to resize the specified input window.
UNDERSCAN	Turns on or off the Underscan feature for the specified window.
UNZOOM	Resets the zoom to normal (100%) for the specified window.
VIDEOASPECTRATIO	Identifies letterbox inputs to display without black borders.
VIDEOINTERLACEFILT	Selects the type of de-interlace filter for the specified window.
WINDOWBORDERCOLOR	Sets the color of the border surrounding a window.
WINDOWBORDERTHICKNESS	Sets the width of the border surrounding a window.
WINDOWDESTINATIONrectangle	Sets both the position and size of an input's destination rectangle.
WINDOWENABLE	Turns on or off the specified window.
WINDOWIDENTIFY	Identifies the specified window on the output.
WINDOWLABELBACKGROUNDCOLOR	Sets the color of the background behind a window label.
WINDOWLABELCOLOR	Sets the color of the label text.
WINDOWLABELENABLE	Turns a window label on or off.
WINDOWLABELJUSTIFICATION	Sets the positioning of the window label.
WINDOWLABELNAME	Sets the label name for the specified window..
WINDOWLABELPOSITION	Specifies the position of the window label.
WINDOWLABELSIZE	Specifies the size of the window label.
WINDOWPRESSETDELETE	Clears the specified preset register.

Table 4-6. Window Commands Summary

Command	Description
<u>WindowPresetLIST</u>	Lists the names of the specified preset.
<u>WindowPresetLISTCLEAR</u>	Deletes all window presets.
<u>WindowPresetLOAD</u>	Loads the specified preset into the SuperView 4000-4/4.
<u>WindowPresetNAME</u>	Assigns a name to the specified preset.
<u>WindowPresetSAVE</u>	Saves the current window parameters to the specified preset
<u>WindowSource Rectangle</u>	Sets the source rectangle for the selected input.
<u>ZooM</u>	Activates the zoom utility.

Refer to the [Window Commands Descriptions](#) section for a complete description of all window positioning and visibility commands.

WINDOW COMMANDS DESCRIPTIONS

The table below lists all window positioning and visibility commands, their arguments and detailed descriptions.

Table 4-7. Window Commands Descriptions

Command	Arguments	Description
FReeZe	<window # ALL> <ON OFF>	Turns freeze status of the selected window on or off . Changes to the Brightness, Contrast, Saturation, Hue and Filter parameters made during a freeze, will not be applied until after the Freeze is turned off. Note: Any change to the output timing resets the freeze status to off. Default: OFF
FullScreen	<window # BLACK>	Sets the selected window to a full screen display. With the BLACK argument, the screen is set to black.
OVerScan	<window #> <ON OFF>	Performs an automatic 2% enlargement on video inputs only. It has no effect on WSR values, and it applies to all video inputs for the specified channel. Overscan is useful in trimming out excess blanking in video signals, or head switching for VTR sources. Unlike WSR , when Overscan is turned on, the enlargement is automatic and constant even when switching between the various video input types. Default: OFF

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
PAN	<window #> [<i j m l> <repetition>]	Activates the pan function for the selected window. Only a zoomed input can be panned. Controls are listed below: <i>i</i> = pan up <i>m</i> = pan down <i>j</i> = pan left <i>l</i> = pan right <i>q</i> = quit
POsition	<window #> [<direction> <repetition>]	Activates the position function, allowing you to move the specified input window around the output display. Controls are listed below: <i>i</i> = move up <i>m</i> = move down <i>j</i> = move left <i>l</i> = move right <i>q</i> = quit The direction and repetition arguments allow you to repeat a movement in one direction without repeatedly pressing the key. For example, to move window 1 to the left 20 times, type: <code>POS 1 j 20</code> The actual pixel or line increments that a window moves is determined by the Setrate command. In the above example, the window moves 40 pixels to the left (20 times the default rate of 2 pixels). Position affects the WDR value for the input.
PRIority	<window # ALL> [<1...8>]	Priority numbers run from one through eight. Priority one is the highest level, meaning that a window with priority one appears in front of all other windows. No two inputs can have the same priority level. If a window's priority is increased, the window previously at that level moves down one, and if necessary, lower priority windows also move down. The All argument allows you to query or change the priority level for all inputs at once.
ResetSourceRectangle	<window #>	Resets the window source rectangle (WSR) to default value that is equal to the HACT and VACT measurements of the specified input signal. Note RSR unzooms a zoomed image.
SETRATE	<x-rate> <y-rate>	Determines the number of pixels (x-rate) or lines (y-rate) a window will move with the Position command. Default: x = 2, y = 2

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
SIZE	<window #>	Activates the size utility, allowing you to resize the specified input window. Controls are: s = smaller l = larger q = quit Size affects the window destination rectangle (WDR) value for the input.
UNderScan	<window #> [ON OFF]	Turns on or off the UNderScan feature for the specified video window. When enabled, it expands the displayed image to include part of the blanking interval.
UNZOOM	<window #>	Resets the zoom to normal (100%) for the specified window.
VideoAspectRatio	<window 5...8> [NORMAL WS1 WS2 WS3 WS4]	Identifies inputs with letterbox displays so that they may be displayed without black borders. Valid for video inputs only. Use this command when using a wide screen display with letterboxed video. Normal = 1.33:1 WideScreen1 = 1.66:1 WideScreen2 = 1.78:1 WideScreen3 = 1.85:1 WideScreen4 = 2.35:1 Default: NORMAL
VideoInterlaceFiLteR	<window 5...8> [NORMAL TEMPORAL ADAPTIVE]	Selects the type of de-interlace filter for the specified window. Applies to video inputs only (Composite or S-Video).

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
WindowDestinationRectangle	<window #> <x> <y> <width> <height>	<p>Sets both the position and size of an input's destination rectangle.</p> <ul style="list-style-type: none"> The <x> and <y> arguments represent the monitor coordinates of the rectangle's top left corner, but hardware limitations may cause the actual placement to differ slightly from that specified. (When you read WDR for any window, the numbers given accurately reflect the hardware state.) The <width> and <height> arguments represent the pixel width and line height of the destination rectangle. width range is 1..1920, height range is 1..1440. <p>The rectangle can be positioned and sized so that part of it is positioned off screen. WDR is limited to the output resolution of the SuperView 4000-4/4 (full screen display).</p> <p>Example: With an output host resolution of 1024 x 768, set window 4 to full screen:</p> <pre>>WDR 4 0 0 1024 768</pre> <p>Example: Place a 100 pixel by 100 line video window at column 300, line 400 on the monitor for input window 2:</p> <pre>>WDR 2 300 400 100 100</pre>
WindowBorderCOLOR	[<red> <green> <blue>] [WHITE YELLOW CYAN GREEN MAGENTA RED BLUE BLACK]	Sets the color of the border around all windows. The user can set the color by setting the red, green, blue values (0...255) or using the pre-defined color values White, Yellow, Cyan, Green, Magenta, Red, Blue or Black.
WindowBorderWIDTH	<window # ALL> [0...100]	Sets the border width around the specified window. The size is set in terms of pixels. To turn the border off set the size to zero. Default: 0
WINdowENable	<window # ALL> [<ON OFF> [duration]]	Turns display of the specified window on or off. The WINEN ALL command is used to turn display of all windows on or off simultaneously. Each window may be faded using the optional duration parameter (range 0.1 .. 5.0 seconds). Windows fade to the background but not to another window. Default: ALL ON

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
WindowLabelBackGro undCOLOR	<window # ALL> [<red> <green> <blue>] [WHITE YELLOW CYAN GREEN MAGENTA RED BLUE BLACK]	Sets the color of the background behind the label text for the specified window label. The user can set the color by setting the red, green, blue values (0..255) or using the pre-defined color values White, Yellow, Cyan, Green, Magenta, Red, Blue or Black.
WindowLabelCOLOR	<window # ALL> [<red> <green> <blue>] [WHITE YELLOW CYAN GREEN MAGENTA RED BLUE BLACK]	Sets the color of the text for the specified window label. The user can set the color by setting the red, green, blue values (0...255) or using the pre-defined color values White, Yellow, Cyan, Green, Magenta, Red, Blue or Black.
WindowLabelENable	<window# ALL> <ON OFF>	Turns on or off the specified label. The label appears in the lower border area if the border is turned ON. If the border is turned OFF the label will be overlaid at the bottom center edge of the specified window. The color of the border surrounding the label and the color of the window text can be changed independently. See WindowLabelCOLOR and WindowLabelBackGroundCOLOR for details.
WINdowIDentify	<window#>	Identifies the specified window on the output. The output returns to the previous state after a period of approximately 2 seconds.
WindowLabelJUSTifica tion	<window # ALL>[LEFT CENTER RIGHT]	Positions the label for the specified window to the center or left, and right edges of the window. See also WINdowLabelPOsition for details on positioning vertically.
WindowLabelNAME	<window #> ["label"]	Provides the label name for the specified window. A window label can be up to 23 characters in length. Spaces cannot be used.
WINdowLabelPOsition	<window # ALL> [TOP BOTTOM]	Positions the label for the specified window at the top or bottom of the window. See also WindowLabelJUSTification for details on positioning horizontally.
WindowLabelSIZE	[NORMAL LARGE]	Selects the font size to be used to be applied to the labels. This is a global command that is applied to all windows.
WindowPresetDELete	<1...10>	Clears the specified preset.
WindowPresetLIST	<1...10 ALL>	This command preset lists details about the source and destination rectangles saved for each window as well as border size and labels. Empty presets entries are not shown. Use the argument ALL to list of all preset names.

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
WindowPresetLISTCL EAR	(none)	Deletes all the window presets. This command responds with a prompt asking for confirmation to proceed the delete function. Note that there is no undo function for this command.
WindowPresetLOAD	<1...10 >	Loads the specified preset into the SuperView 4000-4/4.
WindowPresetNAME	<1...10> [name]	Assigns a name to the specified preset. The name is a string of up to 23 characters in length and may consist of any readable ASCII character except for spaces. See also: WindowPresetLIST .
WindowPresetSAVE	<1...10 >	Saves the current window source and destination parameters to the specified preset.

Table 4-7. Window Commands Descriptions (continued)

Command	Arguments	Description
WindowSource Rectangle	<input#> <x> <y> <width> <height>	<p>Sets the source rectangle for the selected input. The source rectangle is the portion of the original input that is displayed on screen.</p> <ul style="list-style-type: none"> • By default, WSR is set to show the entire image. That is, the default value for RGB inputs is equal to the HACT and VACT measurements of the specified input signal. • For video, WSR defaults to 720x480 for NTSC and 720x574 for PAL. <p>The source rectangle is used to zoom in or out on an image. The <x> and <y> coordinates represent the coordinate screen starting point from which to draw the supplied values of <width> and <height>.</p> <p>Example: To zoom in on the upper left quadrant of an 800x600 input, WSR values are:</p> <pre>wsr <input#> 0 0 400 300</pre> <p>Example: To display only the bottom right quadrant, WSR values are:</p> <pre>wsr <input#> 400 300 400 300</pre> <p>Example: The full, default source rectangle for this 800x600 input is:</p> <pre>wsr <input#> 0 0 800 600</pre> <p>Note that since the horizontal and vertical size can be adjusted independently, this command can be used to stretch or squeeze an image.</p> <p>WSR resets to the default value whenever the signal is acquired or reacquired. That is, if you remove or replace the input signal or if you change the input type on a single channel (using InputTYPE), then WSR resets to the default values for the newly acquired signal.</p>
ZooM	<window #> [<i o> <repetition>]	<p>Activates the zoom utility. Zoom affects the WSR value for the input. Controls are:</p> <ul style="list-style-type: none"> i = zoom in o = zoom out q = quit <p>Zoom range is to a single pixel.</p> <p>Zoom resets to an unzoomed state whenever the signal is acquired or reacquired. That is, if you remove or replace the input signal or if you change the input type setting on a single channel (using InputType), then Zoom resets to the default values for the new signal.</p>

**IMAGE CONTROL
COMMANDS**

After you have made adjustments with the Input commands, you can use the Image Control commands to adjust parameters such as, brightness, contrast and color. A summary of commands is listed below. Click the desired command to access detailed instructions.

Table 4-8. Image Control Commands Summary

Command	Description
<u>BRight</u>	Sets the brightness value of the selected input.
<u>CONTrast</u>	Sets the contrast value of the selected input.
<u>GAMma</u>	Sets a gamma value for the SuperView 4000-4/4.
<u>HUE</u>	Sets the hue value of the selected video input.
<u>SATuration</u>	Sets the saturation value of the selected video input.
<u>SHARPness</u>	Enables or disables the filter for the selected input.

Refer to the [Image Control Commands Descriptions](#) section for a complete description of all image control commands.

IMAGE CONTROL COMMANDS DESCRIPTIONS

The table below lists all image control commands, their arguments and detailed descriptions.

Table 4-9. Image Control Commands Descriptions

Command	Arguments	Description
BR ight	<input# ALL> <-500 500>	Sets the brightness value of the selected input. The ALL argument sets brightness for all four inputs. Default: 0
CON trast	<input# ALL> <0 200>	Sets the contrast value of the selected input. The ALL argument sets contrast for all four inputs. Default: 100
GAM ma	<0.5 2.0>	Sets a gamma value for the SuperView 4000-4/4 output . The translation between electrical input and light output of display devices varies by the type of device. This command is used to match the SuperView 4000-4/4 to the display connected to the output. Changing the gamma affects the gamma of all windows. Default: 1.0
HUE	<input# ALL> <-180 180>	Sets the hue value of the selected input. Use the ALL argument to set the hue for all inputs simultaneously. Default: 0
SAT uration	<input# ALL> <0 200>	Sets the saturation value of the selected input. Use the ALL argument to set the hue for all inputs simultaneously. Default: 100
SHARP ness	<input#> [-5...5]	Sets the sharpness setting for the selected input. Positive values sharpen the image and negative values soften the image. A value of zero sets the sharpness OFF. Default: 0

SERIAL PORT COMMANDS Serial Port Commands are used to control the baud and echo settings. A summary of commands is listed below. Click the desired command to access detailed instructions.

Table 4-10. Serial Port Commands Summary

Command	Description
BAUDrate	Sets the serial port <i>baud</i> rate.
ECHO	Turns the serial echo On/Off.
HANDShaking	Sets the serial port flow control mode.

Refer to the [Serial Port Commands Descriptions](#) section for a complete description of all serial port commands.

SERIAL PORT COMMANDS DESCRIPTIONS

The table below lists all serial port commands, their arguments and detailed descriptions.

Table 4-11. Serial Port Commands Descriptions

Command	Arguments	Description
BAUDrate	< 9600 19200 38400 57600 115200>	Sets the serial port <i>baud</i> rate. The value is automatically saved in NVRAM. Default: 9600
ECHO	<ON OFF>	Turns the serial echo On/Off. The value is saved in the NVRAM. The echo is only present on commands typed and sent to the unit from the serial port. There is no echo on a Telnet connection. Note: The Echo setting has no effect on responses issued by the SuperView 4000-4/4; responses are always visible, regardless of the echo status. Default: ON
HANDShaking	[HW SW]	Set the serial port flow control mode. Use XON/XOFF flow control in the software flow control mode. Default: SW

**NETWORK
COMMANDS**

Network Commands control the settings for the SuperView 4000-4/4's Ethernet port. The values used in this section are typically provided by your facility's IT specialist. A summary of commands is listed below. Click the desired command to access detailed instructions.

Table 4-12. Network Commands Summary

Command	Description
<u>EXIT</u>	Terminates a telnet session.
<u>HOSTNAME</u>	Sets the system host name.
<u>IPADDReSS</u>	Sets the IP address for the SuperView 4000-4/4.
<u>IPSubNET</u>	Sets the IP subnet mask for the SuperView 4000-4/4.
<u>IPGateWay</u>	Sets the SuperView 4000-4/4's IP default gateway.
<u>MACADDReSS</u>	Displays the SuperView 4000-4/4 Ethernet MAC address

Refer to the [Network Commands Descriptions](#) section for a complete description of all network commands.

NETWORK COMMANDS DESCRIPTIONS

The table below lists all network commands, their arguments and detailed descriptions.

Table 4-13. Network Commands Descriptions

Command	Arguments	Description
EXIT	(none)	The EXIT command applies only to a telnet session. Issuing an EXIT command from a telnet client will immediately close the telnet session.
HOSTNAME	[name]	Sets the system host name. The name can be up to 23 characters in length. Use the underscore character in the place of a space.
IPADDReSS	[ddd.ddd.ddd.ddd]	Sets the IP address for the SuperView 4000-4/4. To determine the current IP address, enter the command without an IP address. Note: New IP address settings will not be applied until after a system reset. See also <u>IPGateWay</u> and <u>IPSubNET</u> . Default: 192.168.1.200

Table 4-13. Network Commands Descriptions

Command	Arguments	Description
IPSubNET	[ddd.ddd.ddd.ddd]	Sets the IP subnet mask. This setting may need to be changed to suit the configuration of your network. To determine the current IP subnet setting, enter the command without the subnet mask. Default: 255.255.255.0
IPGateWay	[ddd.ddd.ddd.ddd]	Sets the IP default gateway. This setting may need to be changed to suit your network's configuration. To determine the current IP gateway, enter the command without an address. Default: 192.168.1.1
MACADDRess		Display the current Ethernet MAC address. NOTE: This is a read only command.

MISCELLANEOUS COMMANDS The Miscellaneous commands category control includes a variety of general SuperView 4000-4/4 functions. A summary of commands is listed below. Click the desired command to access detailed instructions.

Table 4-14. Miscellaneous Commands Summary

Command	Description
<u>BackGroundSouRCe</u>	Selects a colored background that appears behind the windows. Provides a choice between solid and shaded background colors.
<u>Help</u>	Displays the entire serial command set or provides help on specific command.
<u>ID</u>	Displays detailed system information.
<u>RestoreFactoryDefaults</u>	Restores all user settings to their factory default values.
<u>RECALLCONFIGuration</u>	Recalls configuration parameters that were manually saved.
<u>SAVECONFIGguration</u>	Forces an update and explicit save of the system's NVRAM.
<u>SETTINGSEXPORT</u>	Exports an ASCII file of system settings to the terminal or controller.
<u>SETTINGSIMPORT</u>	Accepts ASCII data relating to system settings.
<u>STATus</u>	Returns the Status of the SuperView 4000-4/4 and its current settings.
<u>SYStemReSeT</u>	Restarts the SuperView 4000-4/4 control system.
<u>TestPattern</u>	Turns on the designated TestPattern.
<u>UpdateFirmWare</u>	Updates the firmware for the SuperView 4000-4/4.
<u>VERsion</u>	Returns firmware, hardware, and bootcode revision information.

Refer to the [Miscellaneous Commands Descriptions](#) section for a complete description of all miscellaneous SuperView 4000-4/4 commands.

MISCELLANEOUS COMMANDS DESCRIPTIONS

The table below lists all miscellaneous commands, their arguments and detailed descriptions.

Table 4-15. Miscellaneous Commands Descriptions

Command	Arguments	Description
BackGroundSouRCe	[<red> <green> <blue>] [WHITE YELLOW CYAN GREEN MAGENTA RED BLUE BLACK RedRAMP GreenRAMP BlueRAMP WhiteRAMP HRedRAMP HGreenRAMP HBlueRAMP HWhiteRAMP]	Selects a shaded background or a solid background. RedRAMP provides a red background shaded from top to bottom of the output. HRedRAMP provides a red background that is shaded from left to right. To select a solid background color enter the RED, GREEN or BLUE color values (0..255) for the required color or select one of the eight pre-defined saturated colors. To turn off a shaded background use BGSRC 0 0 0 or the BackgroundColor command BGC BLACK
Help	[<command>]	Help , without an argument, displays the entire serial command set. Help , with a command as an argument, displays detailed information about that command.
ID	(none)	Displays detailed information about the SuperView 4000-4/4 system.
RestoreFactoryDefaults	(none)	Restores all user settings to their factory default values and restarts the system.
RECALLCONFIGuration	(none)	Manually recalls (restores) customer configuration parameters that were manually saved by the SaveConfiguration command. Note: The configuration is automatically saved after every change. The system configuration is automatically restored following a power cycle. This command could be used as the user specified alternative to Restore Factory Defaults . See also: SAVECONFIGuration .
SAVECONFIGuration	(none)	Forces an update and explicit save of the system's NVRAM. This is used to provide user defined default settings. Note: These settings are loaded only when the RECALLCONFIGURATION command is used. The configuration that is loaded following a power cycle represents the state of the machine prior to loss of power, not those saved by the SaveConfiguration command. See also: RECALLCONFIGuration .

Table 4-15. Miscellaneous Commands Descriptions (continued)

Command	Arguments	Description
SETTINGSEXPORT	[TIMING WINDOW SYSTEM ALL] [filename]	<p>This command provides the ability to store SuperView 4000-4/4 settings to an external computer. This is useful in backing up settings, or providing the ability to clone the settings on multiple SuperView 4000-4/4 devices.</p> <p>Storing this data is a two step process.</p> <ul style="list-style-type: none"> • Create a text file named export.txt that is stored in SuperView 4000-4/4 memory. • Upload this file to your PC. <p>NOTE: You can specify your own file name using the optional filename argument.</p> <p>To save timing, window and system parameters together use the ALL option (Issuing the command without an argument will also accomplish this).</p> <p>Alternatively you can save just the TIMING, WINDOW or SYSTEM parameters.</p> <p>If you wish to save only the user defined timing values, use the TIMING argument.</p> <p>If you wish to save only the WINDOW PRESET parameters for each active WINDOW PRESET, use the WINDOW argument.</p> <p>If you wish to save only the SYSTEM parameters for the current SYSTEM settings use the SYSTEM argument (note that this does not include the settings saved in the SAVECONFIG register).</p> <p>To save your settings use the following procedure:</p> <ul style="list-style-type: none"> • Create the file using the SETTINGSEXPORT command from the telnet or serial port. • Log in to the ftp server in SuperView 4000-4/4. • Use the ftp command get export.txt to move the file from the SuperView 4000-4/4 to your PC. • Type close to log out of the ftp server <p>See also: SETTINGSIMPORT.</p>

Table 4-15. Miscellaneous Commands Descriptions (continued)

Command	Arguments	Description
SETTINGSIMPORT	[filename]	<p>This command provides the ability to restore or set system settings (or cloning a new system) to match the configuration of a different SuperView 4000-4/4 unit. Accepts the text file created using the SETTINGSEXPORT command. If the filename is not specified, the default filename export.txt is assumed.</p> <p>Use the following procedure to import settings from your PC.</p> <ul style="list-style-type: none"> • Log in to the SuperView 4000-4/4 using ftp from your PC • Type the command put <filename> to place the file into the SuperView 4000-4/4 memory. (<filename> is the name of the file created using the SETTINGSEXPORT command). • Type quit to log out of the SuperView 4000-4/4 ftp server. • From the telnet or serial port issue the command SETTINGSIMPORT <filename>. Note that if you use the default filename export.txt you do not need to specify the filename. <p>See also: SETTINGSEXPORT.</p>
STATus	(none)	Returns details about the current graphics input signals that are applied to each SuperView 4000-4/4 graphics input.
SYStemINFO	(none)	Displays detailed information about the SuperView 4000-4/4 system.
SYStemReSeT	(none)	Restarts the SuperView 4000-4/4 control system. This will have the same effect as rebooting from power off.
TestPattern	[<OFF BARS HBARS GRID RAMPS >]	<p>Turns on the designated TestPattern (moving bars, grayscale, or color bars). Use the OFF argument to turn the TestPattern off.</p> <p>Default: OFF</p>

Table 4-15. Miscellaneous Commands Descriptions (continued)

Command	Arguments	Description
UpdateFirmWare	(none)	<p>Loads new firmware into the SuperView 4000-4/4.</p> <p>This is a two step process.</p> <ul style="list-style-type: none">• The new firmware must be first be downloaded to the SuperView 4000-4/4.• Load the new firmware use the UFW command.• See Appendix D for further information.
VERsion	(none)	Returns firmware, hardware, and bootcode revision information.

TIMING PARAMETERS

The table below lists timing parameters, values and ranges used for both the input and output timing functions. Advanced users can also use the table to assist with values listed in the [Timing Format List](#).

For example, if you type `INT <input #>` to query the system's **Input Timing** values, you will get a string of values (`<hfp> <hs> <hbp> <hact> <vfp> <vs> <vbp> <vact>`) that represent SuperView 4000-4/4's settings for that input. The table below will greatly assist in clarifying each value's meaning.

Note Internally, SuperView 4000-4/4 maintains two separate lists of timing parameters one for inputs and one for output timings. However, the parameter definitions and ranges are identical for both lists.

Table 4-16. Definitions and Ranges for Timing Parameters

Parameter	Definitions	Ranges	Comments
HFP	Horizontal front porch	0 to 640 pixels	The beginning of the horizontal blanking interval.
HS	Horizontal sync	16 to 640 pixels	The width of the horizontal synchronizing pulse
HBP	Horizontal back porch	0 to 640 pixels	The end of the horizontal blanking interval. The total horizontal blanking = HFP + HS + HBP.
HACT	Horizontal active	16 to 1920 pixels	The active picture interval (non-blanked portion of the image). The total pixel count per line = HACT + HFP + HS + HBP.
VFP	Vertical front porch	0 to 512 lines	The part of vertical blanking prior to the vertical sync.
VS	Vertical sync	2 to 32 lines	The width of the vertical sync period.
VBP	Vertical back porch	0 to 512 lines	The part of the vertical blanking signal following the vertical sync interval.
VACT	Vertical active	12 to 1440 lines	The number of active lines of picture.
VTOT	Total Vertical line count	NA	This parameter is measured by SuperView 4000-4/4. Users may not define this value, but the sum of VFP + VS + VACT must equal VTOT.

Table 4-16. Definitions and Ranges for Timing Parameters (continued)

Parameter	Definitions	Ranges	Comments
HFREQ	Horizontal frequency in Hz	12.5 to 125 kHz	This parameter is measured by SuperView 4000-4/4. This is a read only parameter.
SYNC	Sync format	3, 4, or 5 wires	This command applies to analog RGB inputs only. In 3 wire sync systems the H & V sync signals are combined with the Green signal. In 4 wire sync systems the H&V sync signals are combined and transmitted on a dedicated wire. 5 wire systems the H & V signals are transmitted on separate dedicated wires.
HPOL	Horizontal sync polarity	1 or 0	The value 1 represents positive sync polarity and the value 0 represents negative sync polarity. Typically the horizontal and vertical sync have the same polarity. Note that three wire sync is always negative polarity.
VPOL	Vertical sync polarity	1 or 0	The value 1 represents positive sync polarity and the value 0 represents negative sync polarity. Note that three wire sync is always negative polarity.
IL	Interlaced/Noninterlaced	1 or 0	The value 1 represents interlaced scan and 0 represents non-interlaced (progressive) scan. Note that video signals are typically interlaced, and graphics signals are typically non-interlaced.

TIMING FORMAT LIST

The table below lists all of SuperView 4000-4/4's preset timing format settings. User defined settings can also be added to this list. These settings are used to match the input signals coming into the SuperView 4000-4/4 and adjust the output to that of your display device. In Chapter 2, refer to the [Timing Adjustments](#) section for instructions on using the list.

Columns are provided for the timing ID, plus all of the individual parameters such as frequency, sync, polarity, interlace and many more. Refer to the [Timing Parameters](#) section for a detailed explanation of each parameter.

Please note:

- Because all parameters can be modified with the [InPutTiMing](#) and [OutPutTiMing](#) functions, advanced users can tweak settings and then store them using the [InPutSAVE](#) and [OutPutTiMingSAVE](#) functions.
- Custom settings can also be named using the [InPutNAME](#) and [OutPutTiMingNAME](#) functions.
- If desired, print this list and keep a record of any user-defined settings that you configure.

Table 4-17. Factory Timing List

ID	TYPE	HF P	HS P	HB T	HAC	HFRQ	VF P	VS P	VB P	VACT	SYN C	HPO L	VPO L	IL
1	VESA 640 x 350 @ 85Hz	32	64	96	640	37.861	32	3	60	350	5	1	0	0
2	VESA 640 x 400 @ 85Hz	32	64	96	640	37.861	1	3	41	400	5	0	1	0
3	VESA 720 x 400 @ 85Hz	36	72	108	720	37.927	1	3	42	400	5	0	1	0
4	VESA 640 x 480 @ 60Hz	16	96	48	640	31.473	10	2	33	480	5	0	0	0
5	VESA 640 x 480 @ 72Hz	24	40	128	640	37.861	9	3	28	480	5	0	0	0
6	VESA 640 x 480 @ 75Hz	16	64	120	640	37.500	1	3	16	480	5	0	0	0
7	VESA 640 x 480 @ 85Hz	56	56	80	640	43.269	1	3	25	480	5	0	0	0
8	VESA 800 x 600 @ 56Hz	24	72	128	800	35.156	1	2	22	600	5	1	1	0
9	VESA 800 x 600 @ 60Hz	40	128	88	800	37.879	1	4	23	600	5	1	1	0
10	VESA 800 x 600 @ 72Hz	56	120	64	800	48.077	37	6	23	600	5	1	1	0
11	VESA 800 x 600 @ 75Hz	16	80	160	800	46.875	1	3	21	600	5	1	1	0
12	VESA 800 x 600 @ 85Hz	32	64	152	800	53.674	1	3	27	600	5	1	1	0

ID	TYPE	HF P	HS P	HB P	HAC T	HFRQ	VF P	VS P	VB P	VACT	SYN C	HPO L	VPO L	IL
13	VESA 1024 x 768 @ 43 Hz	8	176	56	1024	35.601	0	4	20	768	5	1	1	1
14	VESA 1024 x 768 @ 60Hz	24	136	160	1024	48.363	3	6	29	768	5	0	0	0
15	VESA 1024 x 768 @ 70Hz	24	136	144	1024	56.476	3	6	29	768	5	0	0	0
16	VESA 1024 x 768 @ 75Hz	16	96	176	1024	60.023	1	3	28	768	5	1	1	0
17	VESA 1024 x 768 @ 85Hz	48	96	208	1024	68.677	1	3	36	768	5	1	1	0
18	VESA 1152 x 864 @ 75Hz	64	128	256	1152	67.500	1	3	32	864	5	1	1	0
19	VESA 1280 x 960 @ 60Hz	96	112	312	1280	60.000	1	3	36	960	5	1	1	0
20	VESA 1280 x 960 @ 85Hz	64	160	224	1280	85.938	1	3	47	960	5	1	1	0
21	VESA 1280 x 1024 @ 60Hz	48	112	248	1280	63.981	1	3	38	1024	5	1	1	0
22	VESA 1280 x 1024 @ 75Hz	16	144	248	1280	79.976	1	3	38	1024	5	1	1	0
23	VESA 1600 x 1200 @ 60Hz	64	192	304	1600	75.000	1	3	46	1200	5	1	1	0
24	EIA-343-A 675 lines	16	56	64	832	20.253	2.5	2.5	20	312	4	1	1	1
25	EIA-343-A 729 lines	20	64	80	900	21.870	2.5	2.5	22	337	4	1	1	1
26	EIA-343-A 875 lines	26	96	118	1080	26.245	3	3	27	404	4	1	1	1
27	EIA-343-A 945 lines	36	112	140	1164	28.343	3	3	29	437	4	1	1	1
28	EIA-343-A 1023 lines	44	136	164	1260	30.692	4	4	30	473	4	1	1	1
29	720 x 480, 29.97i	16	61	61	720	15.734	3	3	14	242	3	0	0	1
30	720 x 576, 25i	12	66	66	720	15.625	2.5	2.5	20	287	3	0	0	1
31	960 x 480, 29.97i	23	69	92	960	15.734	3	3	14	242	3	0	0	1
32	960 x 576, 25i	23	69	100	960	15.625	2.5	2.5	20	287	3	0	0	1
33	1280 x 720, 24	70	40	260	1280	18.000	5	5	20	720	3	0	0	0
34	1280 x 720, 30	70	40	260	1280	22.500	5	5	20	720	3	0	0	0

ID	TYPE	HF P	HS P	HB P	HAC T	HFRQ	VF P	VS P	VB P	VACT	SYN C	HPO L	VPO L	IL
35	1280 x 720, 60	70	40	26 0	1280	45.00 0	5	5	20	720	3	0	0	0
36	1920 x 1080, 24i	594	44	19 2	1920	27.00 0	2	5	15. 5	540	3	0	0	1
37	1920 x 1080, 24p	594	44	19 2	1920	27.00 0	4	5	36	1080	3	0	0	0
38	1920 x 1080, 30i	44	44	19 2	1920	33.75 0	2	5	15. 5	540	3	0	0	1
39	1920 x 1080, 30p	44	44	19 2	1920	33.75 0	4	5	36	1080	3	0	0	0
40	1920 x 1080, 60p	44	44	19 2	1920	67.50 0	4	5	36	1080	3	0	0	0
41	1920 x 1035, 30i	44	44	19 2	1920	33.75 0	5	5	35. 5	517	3	0	0	1
42	1365 x 768, 60p	51	50	60	1365	47.28 0	4	4	12	768	5	1	1	0
43	1360 x 768, 60p	64	176	19 2	1360	47.71 2	3	6	18	768	5	1	1	0
44	1920 x 1200, 60p	48	32	80	1920	74.03 8	3	6	26	1200	5	1	0	0
45	VESA 1400 x 1050, 60Hz	88	144	23 2	1400	65.31 6	3	4	32	1050	5	0	1	0
46	VESA 1400 x 1050, 75Hz	104	144	24 8	1400	82.27 8	3	4	42	1050	5	0	1	0

NOTE:

Timing list entries 1 - 46 are factory defined timing parameters.

Timing list entries 47 - 99 are reserved for future pre-defined parameters.

Timing list entries 100-160 are for user defined timing list entries.



ADVANCED SET UP

IN THIS CHAPTER

This chapter provides describes how to use the Web Control Panel (WCP) for Advanced Set Up of the SuperView 4000-4/4. Note that all of these set up functions can also be accomplished by using the command line interface (see the SuperView 4000-4/4 [Chapter 4](#) on page 42 for details).

WEB CONTROL PANEL

To access the Web Control Panel you will have to connect to the SuperView 4000-4/4 using a standard Web browser. See [Chapter 2](#) (page 7) for details.

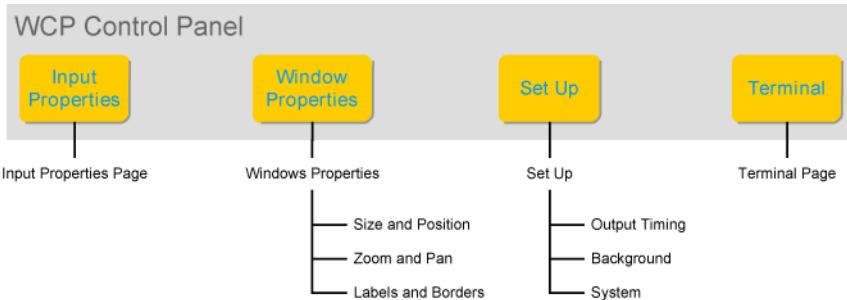


Figure 5-1. WCP Menu Selections

Set up controls are accessible directly from the Web Control Panel by clicking on the Set Up and Input Properties buttons:

- Input Properties
 - ~ Input timing selection and adjustment
- Set Up
 - ~ Set System parameters
 - ~ Set Output Timing (format)
 - ~ Set Output Background

SYSTEM SETTINGS

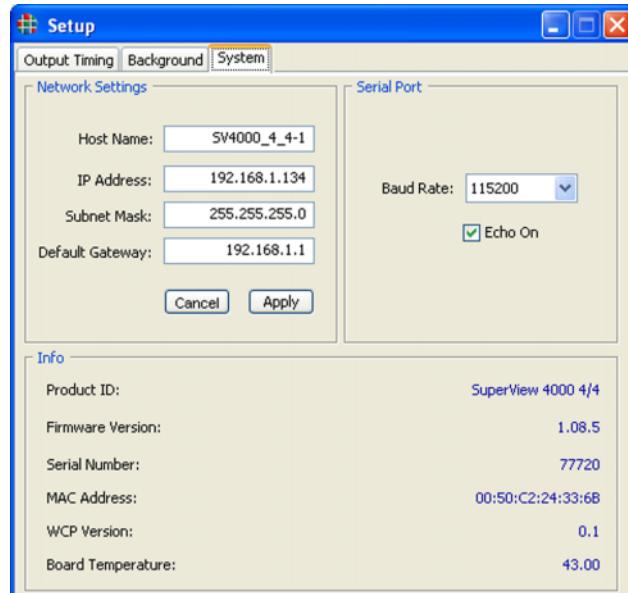


Figure 5-2. WCP Set Up System Page

SERIAL PORT SETTINGS

SuperView 4000-4/4 provides a choice of baud rates ranging from 9600 baud to 15200 baud.

The default baud rate is 9600 baud. To change the baud rate use the following procedure:

- Click on the WCP control panel (Figure 5-1) **Set Up** button.
- Select the **System** page (Figure 5-2).
- Select the desired baud rate from the drop down box.

If you are using SuperView 4000-4/4 with a terminal emulator you will probably want to have the serial port echo turned on. In some control applications you may want to disable echo. To turn the serial port echo OFF, use the following procedure:

- Click on the WCP control panel (Figure 5-1) **Set Up** button.
- Select the **System** page (Figure 5-2).
- Click the **Echo On** check box to deselect (or select) serial port Echo.

NETWORK SETTINGS

There are a number of network settings that are used to set up the IP parameters for the SuperView 4000-4/4. These include the following:

- Host Name
- IP Address
- Subnet Mask
- Default Gateway

Change these settings as required by your installation requirements.

Note

After changing these settings, a reboot will be required.

OUTPUT SETTINGS

OUTPUT TIMING

SuperView 4000-4/4 supports a wide range of pre-defined output formats including the majority of standard VESA formats.

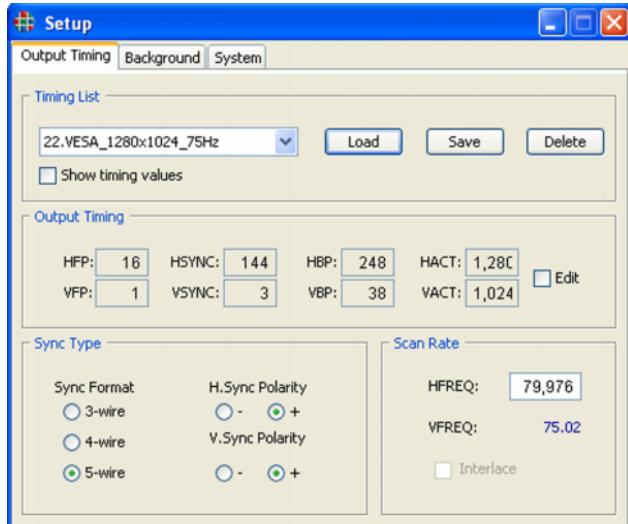


Figure 5-3. WCP Set Up Output Timing Page

LOADING FROM THE TIMING LIST

To select a new timing format use the following procedure:

- Click on the WCP control panel (Figure 5-1) **Set Up** button
- Select the **Output Timing** page (Figure 5-3)
- Use the drop down **Timing List** menu to select the timing format that you require.
- Click the **Load** button adjacent to the **Timing List** box.

VIEWING CURRENT TIMING SETTINGS

The timing parameters displayed in the lower section of the page relate to the settings currently in use. When you use the drop down timing list, the timings shown in the **Output Timing** section are not updated until you load the new timing entry. To view the timing values before loading them, check the **Show Timing Values** check box. When the box is checked and a new entry is selected the values associated with the new entry will be displayed in the **Output Timing** section in red.

CREATING A NEW TIMING ENTRY INTO THE TIMING LIST

If there is no entry in the timing list that matches your desired output signal you can create a new entry in the list containing the exact parameters. You may find an entry in the list that is very close to your parameters, and in this case you can load the entry, modify it, and then save the new entry to the user defined timing

list. Use the following procedure to create a new (user defined) entry in the timing list:

- Click the **EDIT** button in the **Output Timing** section of the **Output Timing** page.
- Enter new timing parameters into each of the timing parameter boxes.
- Scroll to an empty timing list slot in the **Timing List** entry box (user definable entries are from 100-160).
- Click the **SAVE** button in the **Timing List** section of the **Output Timing** page.

INPUT SETTINGS

INPUT TIMING

There are a wide variety of graphics signals that can be used with SuperView 4000-4/4, many of which are supported directly by a pre-defined timing list. When a signal is connected to a graphics input, SuperView 4000-4/4 automatically searches the list for a match, and will load the timing values to exactly match the input signal (autosync). If a match is not found, then it is possible to define the parameters of the signal (interactively or parametrically) and to add them to the timing list.

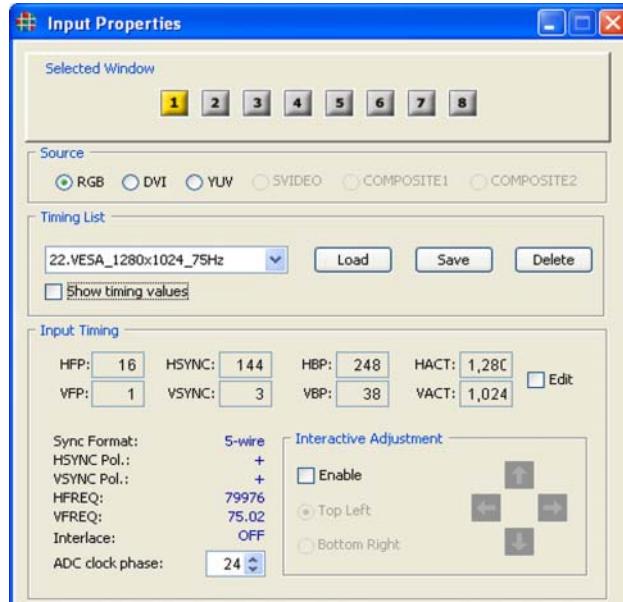


Figure 5-4. WCP Input Properties Page

The details of the current (loaded) input timings settings are shown in the **Input Timing** section of the **Input Properties** page. To view the timing parameters associated with a new (unloaded) selection in the **Timing List** window, click on the **Show timing values** check box. The timing parameters associated with the new selection will then be displayed in red.

LOADING FROM THE TIMING LIST

If you know the timing parameters of the signal you can manually load the timing from the either the factory timing list or the user defined timing list.

Use the following procedure to load a new input timing set.

- Click on the **Timing** scroll button and scroll through the list to the required timing entry.
- Refer to page 74. [Timing Parameters](#) for a list of pre-defined timing parameters.
- Click the **LOAD** button to accept the selected entry in the list.

VIEWING CURRENT TIMING SETTINGS

The timing parameters displayed in the lower section of the page relate to the settings currently in use. When you use the drop down timing list, the timings shown in the **Input Timing** section are not updated until you load the new timing entry. To view the timing values before loading them, check the **Show Timing Values** check box. When the box is checked and a new entry is selected the values associated with the new entry will be displayed in the **Input Timing** section in red.

CREATING A NEW TIMING ENTRY INTO THE TIMING LIST

If there is no entry in the timing list that matches your specific signal you can create a new entry in the list containing the exact parameters of your input signal. You may find an entry in the list that is very close to your parameters, and in this case you can load the entry, modify it, and then save the new entry to the user defined timing list. Use the following procedure to create a new (user defined) entry in the timing list:

- Click the **EDIT** button in the **Input Timing** section of the **Input Properties** page.
- Enter new timing parameters into each of the timing parameter boxes.
- Scroll to an empty timing list slot in the **Timing List** entry box (user definable entries are from 100-160).
- Click the **SAVE** button in the **Timing List** section of the **Input Properties** page

INTERACTIVE TIMING

If you do not know the exact timing parameters for an input signal, you can adjust the timing parameters interactively so that you can exactly adjust the parameters visually. To set the timing parameters interactively use the following procedure:

- Allow SuperView 4000-4/4 to automatically lock to the input signal. Disconnect and then reconnect the input signal if you want to trigger SuperView 4000-4/4 to begin the search again.
- Click the **Enable** button in the **Interactive Adjustment** section of the **Input Properties** page.
- Click the radio button labeled **Top Left**

- Use the Up/Down, Left/Right adjustment buttons in the **Interactive Adjustment** section to position the top left corner of the input image in the desired location at the top left of the display.
- Click the radio button labeled **Bottom Right**
- Use the Up/Down, Left/Right adjustment buttons in the **Interactive Adjustment** section to position the lower right corner of the input image in the desired location at the lower right corner of the display.
- Recheck the **Top Left** check box and readjust as needed to position the image in the top left corner of the display
- Recheck the **Bottom Right** check box and readjust as needed to position the image in the bottom right corner of the display
- Perform the previous two steps if necessary until you are satisfied that both corners of the image are correctly positioned.
- Save your new timing parameters by selecting a new entry in the range 100-160 from the timing list scroll down list.
- Click the **SAVE** button

A dialog box requesting a name by which the new entry will be known in the timing list..

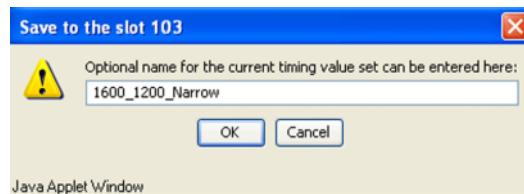


Figure 5-5. Timing List Name dialog box

- Enter a name for the new timing entry and click **OK**.

The name can be up to 23 characters in length and can contain upper and lower and numeric characters. Do not use a space or the / or \ characters (use the _ character instead).

INPUT CONVERTER CLOCK PHASE

For optimum image quality of analog RGB (or YUV) HDTV inputs, it is important that sample clock in the Analog / Digital Converter (ADC) has the same phase as the original sample phase of the input signal. If the phase is not correctly set, the image may appear to have noisy or indistinct edges. Use the following procedure to set the ADC phase:

- Be sure that the input signal has a lot of high frequency detail
- Click on the **UP** button next to the **ADC clock phase** ([Figure 5-4](#)) spin box and view the output image. If the image quality deteriorates, click on the **DOWN** button and continue clicking on the button until the image quality stops improving.
- The optimum point has been reached when you can click on either the **UP** or the **DOWN** button and the image quality can be seen to deteriorate.

SELECTING A TEST PATTERN

TEST PATTERNS

To assist in setting up and debugging an installation, SuperView 4000-4/4 provides a number of internally generated test patterns. These may be selected without having an input signal connected.

The following test patterns are provided:

- Bars (Vertical color bars to verify the Red/Green/Blue output signals are present at the correct amplitude and timing)
- HBars (Horizontal color bars to verify that the Red/Green/Blue output signals are present at the correct amplitude and timing)
- Grid (White convergence pattern to assist in display setup)
- Ramps (Horizontal ramp/sawtooth pattern to verify that all digital output levels are present)

Test patterns are selected from the **Background** page as shown in the following figure.

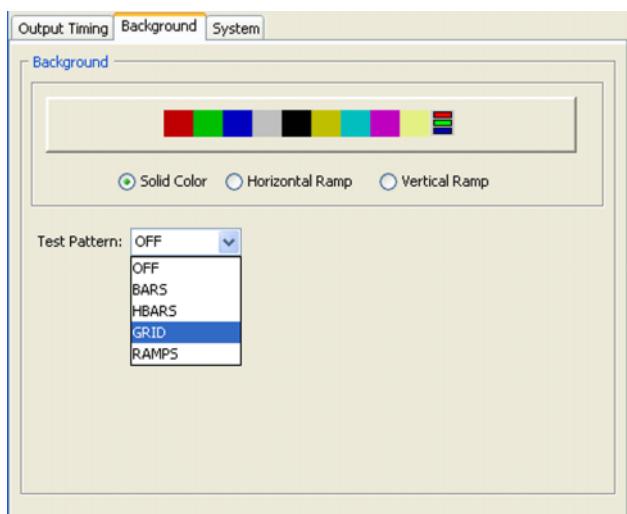


Figure 5-6. WCP Test Pattern selection

To select a Test Pattern, use the following procedure:

- Click on the WCP control panel (Figure 5-1) **Set Up** button
- Select the **Background** page (Figure 5-6)
- Select the desired test pattern from the **Test Pattern** drop down list at the bottom of the page

NOTE: To disable the test pattern, use the **Test Pattern** drop down box and select the **OFF** option.



WINDOW CONCEPTS

IN THIS CHAPTER

This chapter deals with the basics of window size and position beginning with the concepts of source and destination rectangles that are used throughout the document. In addition to sizing and positioning windows on the output, users can assign different types of signal to each window and apply border and titles to each window. These and other topics are shown in the following list:

- [Image Rectangles](#)
- [Window Source Rectangle](#)
- [Window Destination Rectangle](#)
- [Aspect Ratio](#)
- [Positioning and Clipping](#)
- [Priority Levels](#)
- [Window Borders](#)
- [Window Labels](#)

IMAGE RECTANGLES

The resolution of raster scanned images is defined by the number of pixels per line and the total number of lines per frame. For example the XGA format is defined as having a resolution 1024 x 768 (1024 pixels per line and 768 active lines). This convention is applied to both the input and output of the SuperView 4000-4/4. In windowing products, the input signal is the **source image** and the portion of the input signal that will be used is known as the **source rectangle**. This is an important point as it means the source rectangle does not necessarily have the same dimensions as the input signal resolution.

The **destination rectangle** defines the size and position of the window displayed on the output.

Each type of rectangle is described below:

- A **source rectangle** selects a rectangular *portion* of a full size input image. Typically, the source rectangle contains the *entire* image, but it can also contain a cropped portion (or subset) of the entire picture.

This portion fills the destination rectangle (as described below), and appears in a window on the display device. SuperView 4000-4/4 automatically changes an input's source rectangle as various zoom and pan controls are used to manipulate portions of the full-size image.

- A **destination rectangle** specifies the output window's size and screen position on your display device. The contents of the window is defined by the source rectangle's parameters.

The setting of source and destination rectangles is accomplished using the **WSR** (Window Source Rectangle) and **WDR** (Window Destination Rectangle) commands, as discussed in the following sections.

**WINDOW SOURCE
RECTANGLE**

The **source rectangle** for each input is defined in terms of the input image's pixel position in coordinate space. The image's top left corner is positioned using these coordinates, and the image's width and height are defined in the same way.

In the first example below, the full size source image is 640 pixels wide by 480 lines high.

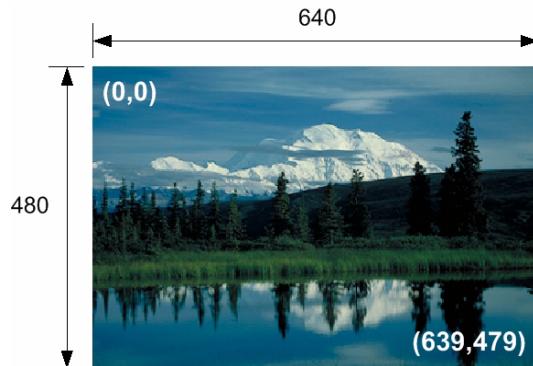


Figure A-1. Full Size Source Image

By convention, the upper left corner starts at pixel coordinate (0,0). The bottom right corner ends at coordinate (639,479). When using the SuperView 4000-4/4, the Window Source Rectangle (**WSR**) uses the following convention to define a window source rectangle:

`x, y, width, height`

The x and y parameters define the coordinates of the first pixel located at the top left of the image. The width and height parameters then define the size of the image. This convention is used in the command line interface with the **WSR** command which sets the source rectangle for the selected input.

Thus, to define (and use) the full size picture from [Figure A-1](#) as the window output the WSR would be defined as :

`0 0 640 480`

In the second example below, a *portion* of the full size source image has been defined.

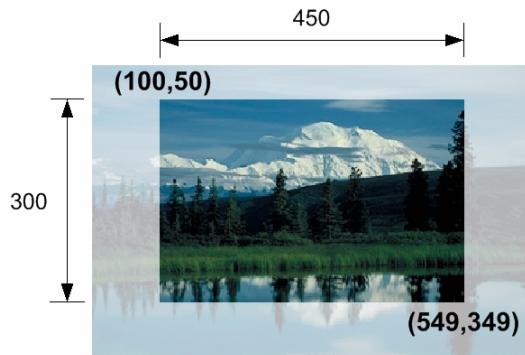


Figure A-2. Portion of Full Size Image

The cropped image is 450 pixels wide by 300 lines high. The upper left corner starts at pixel coordinate (100,50). The bottom right corner ends at coordinate (549,349).

Thus, to define (and use) the cropped size picture from [Figure A-2](#) as your window the WSR would be defined as:

100 50 450 300

**WINDOW
DESTINATION
RECTANGLE**

Each input's **destination rectangle** is defined in terms of the **display device's** screen space coordinates, rather than the input picture's coordinates. Each destination rectangle represents the source rectangle *mapped* to a specific size and position on the display.

In the example below, the display monitor is 1280 x 1024. The full size source rectangle from [Figure A-1](#) is mapped to a destination rectangle, starting at coordinates (300,500), with a horizontal width of 600 pixels and a vertical height of 250 lines.

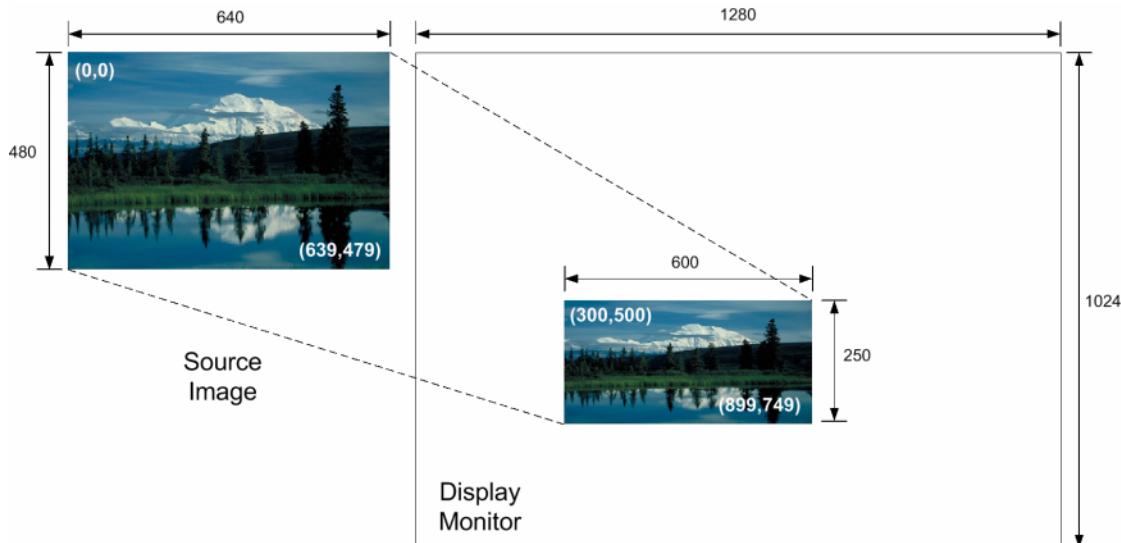


Figure A-3. Full Size Source mapped to Destination

The Window Destination Rectangle (**WDR**) defines the destination rectangle for the window displayed on the output in terms of both position and size. Thus, to map the full size picture from [Figure A-1](#) (**WSR** 0 0 639, 479) to a destination rectangle the **WDR** would be defined as:

300 500 600 250

Note that in this example the original image size (the source) is 640 x 480 pixels but the size of the destination is 600 x 250. The resulting image (destination image) is smaller than the original and also has a different aspect ratio. Also the image is no longer located at the top left (origin) of the output display but is more towards the center.

In the next example, the cropped image from [Figure A-2](#) is mapped to a new destination space on the display device.

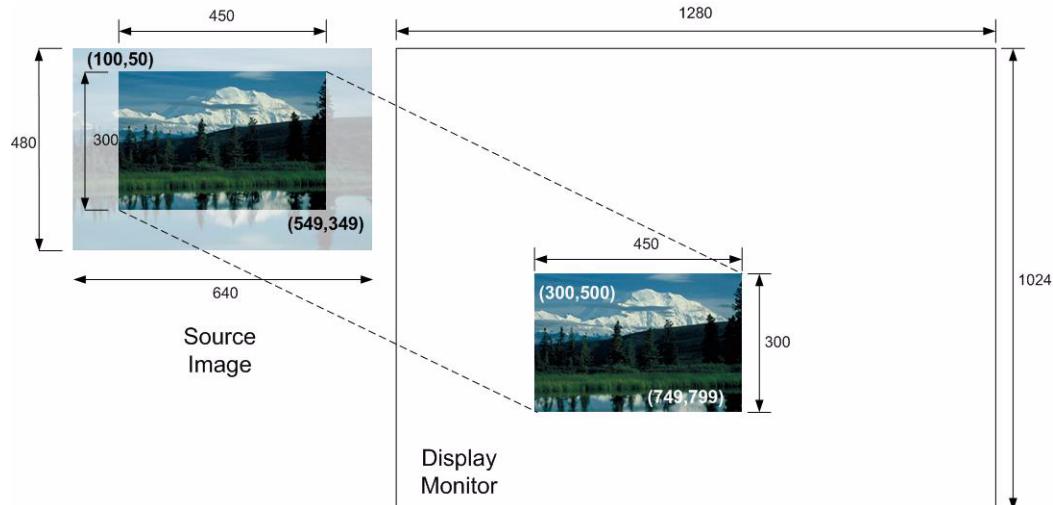


Figure A-4. Cropped Source mapped to Destination

In this case the **WDR** would be defined as:

300 500 450 300

By this means we have taken a portion of the source image and without resizing it can place it anywhere on the display device. By changing the destination size parameters (450 300 in the above example), to 1280 x 1024 we could expand this cropped image to fill the display device. In this case the **WDR** would be

0 0 1280 1024

NOTE: This is effectively zooming into a section of the source image.

ASPECT RATIO

As you learned in the previous sections, the **source rectangle** selects any desired rectangular portion of an input image, and this image can then be displayed (mapped) in a **destination rectangle** in an identical or different sized display window. Please note:

- The destination rectangle can be set to any shape and any size on the output monitor up to the full size of the output display screen.
- The size and shape of the source rectangle are *independent* of the destination rectangle's size and shape.

Suppose that you have defined an input's source and destination rectangles so that a 320 x 240 portion of a video source image is mapped into a 640 x 480 window. Here, the destination rectangle is larger than the source rectangle, but it has the *same shape* and the same width-to-height aspect ratio (4:3). Thus, the original input image is enlarged (scaled) equally, in both dimensions.

Varying the destination rectangle's size but preserving its aspect ratio makes the displayed image larger or smaller. As long as its proportions correspond to those of the source rectangle, the output image resembles the input image.

POSITIONING AND
CLIPPING

If you *independently* vary the shape of either the source or destination rectangle, so that their aspect ratios are no longer the same, the displayed picture will appear stretched or squeezed as compared to the original image.

A window can be positioned anywhere on the output display. If the window's destination rectangle is defined so that a portion is off the screen, that portion of is clipped until it is moved back into view.

Two examples of image clipping are illustrated below. In the first example, the full size source rectangle (640 x 480) is mapped to a destination rectangle, starting at (900,100). The right-hand portion of the source image is clipped.



Figure A-5. Clipped Image, Screen Right

In the second example, the same source rectangle is mapped to a destination rectangle starting at (-200,200). By specifying screen coordinates with negative values, the left and top edges of the source image can be clipped.

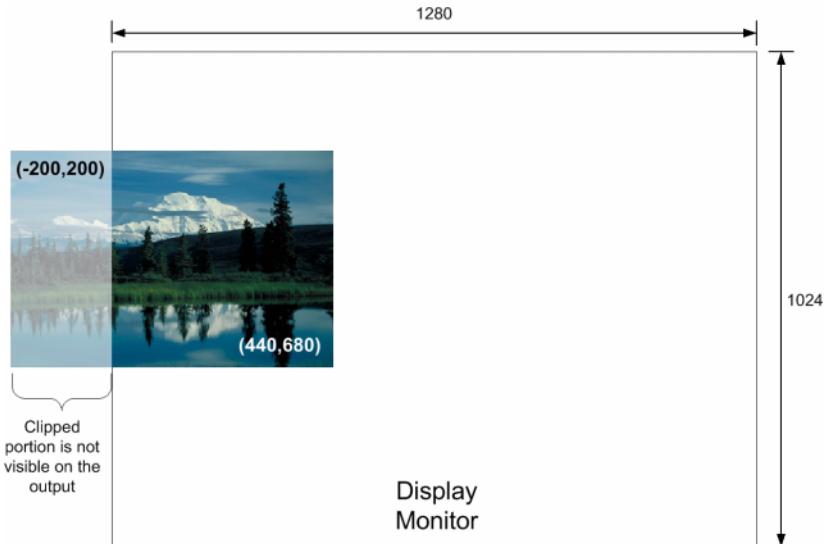


Figure A-6. Clipped Image, Screen Left

PRIORITY LEVELS

SuperView 4000-4/4 uses the **Priority** function to determine which of several overlapping windows are visible. You can change the priority levels of windows so that different ones come into the foreground and others move to the background. When windows overlap, their relative visibility depends on their respective user-assigned priority levels.

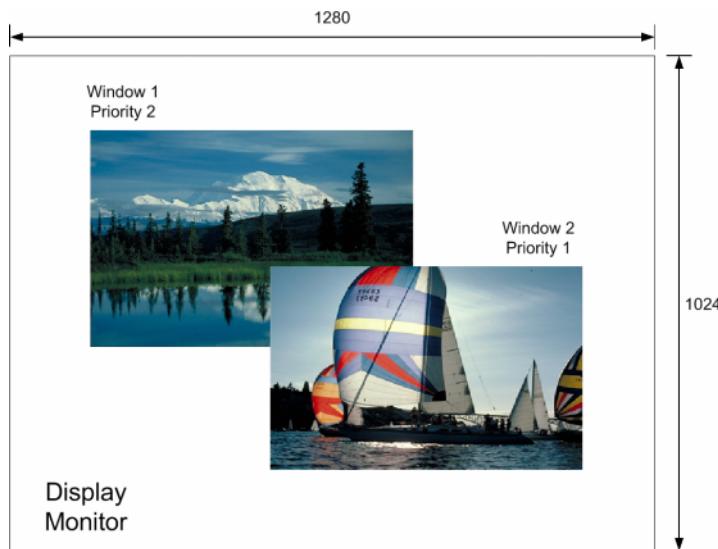


Figure A-7. Image Priorities

In the example above, since priority level 1 corresponds to the highest priority in this example, window 2 has priority over the other windows, and overlays any overlapped window with a lower priority.

Please note:

- The available levels are 1 through 8, where 1 represents the highest priority (and visibly, the image that is on top).
- The window with the highest priority is the one that is displayed on top. Lower priority windows are stacked beneath it.
- Only the overlapped region of a window is actually obscured by a higher priority window. No two windows may have the same priority.
- If a window's priority is increased, the window previously holding that priority is automatically demoted by one level.
- Promoting (or demoting) one window leaves the priorities of the other windows unchanged relative to each other.

WINDOW BORDERS

A border can be individually applied to each of the SuperView 4000-4/4 windows.

Border width is adjustable from zero to one hundred pixels in width and can be set independently for each window.

Border color can be set using pre-defined saturated colors or custom figures using a 24 bit value. Border color can be set independently for each window or globally applied to all windows.

Tip

If you add a border to a window, the border is applied outside of the window and the WDR is unchanged. To retain the same position, the WDR start point would need to be offset by the border width. To retain the same overall size the WDR height and width should be reduced by 2x the width of the border.

▲ Example: The WDR is 120 100 640 480 before a border is applied and a 30 pixel border is added. To retain the same overall size and position the WDR should be changed to

150 130 580 420

See [Window Commands](#) (Chapter 4) for details about enabling borders using the command line interface or [Window Borders](#) (Chapter 3) for setting borders using the Web Control Panel.

WINDOW LABELS

A label can be applied to each window independently of the border. The label is only visible on the WCP and does not appear over the active picture area. The window label can be positioned, sized, and justified to your needs. There are two sizes of label text and size is not affected by the border width. To provide visibility in the absence of a border, the label is provided with its own background.

The label has the following attributes, all of which can be set for each window.

- Window Label Enable - the label can be turned on or off for each label independently.
- Window Label Name - a 23 character message for each window. (Note that the space character is allowed in this feature.)
- Window Label Font - choose the color of the text for each window label.
- Window Label Background Color - a background is applied behind the label text. The color of this background can be set independently for each label.
- Window Label Position - choose the position for the window label either at the top or bottom of the selected window.
- Window Label Justification - the label can be justified to the left, center, or right of the selected window.
- Window Size - the window label can be displayed at normal or larger than normal size.

See [Window Commands](#) (Chapter 4) for details about setting labels using the command line interface or [Window Labels](#) (Chapter 3) for setting labels using the Web Control Panel.



TECHNICAL SPECIFICATIONS

This chapter is divided into two sections:

- **General Specifications**, provides technical specifications for the SuperView 4000-4/4 including functional and performance specifications.
- **Parameter Storage**, provides details of the types of data that are used in SuperView 4000-4/4 and how they may be stored and retrieved.

Note

The specifications listed in this appendix apply to a fully configured SuperView 4000-4/4 system.

GENERAL SPECIFICATIONS

The following section provides detailed tables of functional and performance specifications:

- [System Characteristics](#)
- [Digital Input Specifications](#)
- [Analog Input specifications](#)
- [Composite Video Input Specifications](#)
- [S-Video Input Specifications](#)
- [Graphic Output Specifications](#)
- [Window Control Specifications](#)
- [Control Specifications](#)
- [Power and Physical Specifications](#)

**SYSTEM
CHARACTERISTICS**

The table below lists SuperView 4000-4/4 system characteristics:

Table B-1. System Characteristics

Parameter	Specification
Number of windows	Total of eight windows.
Window Borders and labels	Border widths may be set independently for each window. Label text and color may be applied for each window.
Input types (windows 1-4)	The user may select between the following types for each input channel: <ul style="list-style-type: none"> • RGB / YP_bP_r component (HDTV) • DVI
Input types (windows 5-8)	The user may select between the following types for each input channel: <ul style="list-style-type: none"> • Composite video • S-Video
# of graphics outputs	1 x DVI 1 x Analog RGB
Horizontal scan rate	12 kHz to 125 kHz (non interlaced)
Frame rate (Refresh rate)	Up to 200 Hz
Resolution	640 x 350 to 1920 x 1200 pixels

**DIGITAL INPUT
SPECIFICATIONS**

The table below lists high resolution graphics digital input specifications:

Table B-2. Digital Input Specifications

Parameter	Specification
Type	DVI - Single link
Maximum bandwidth	1.65 Gbps
Connector type	DVI-I Integrated digital / analog connector, MicroCross (Molex #74320)

**ANALOG INPUT
SPECIFICATIONS**

The table below lists high resolution graphics analog input specifications:

Table B-3. Analog Input Specifications

Parameter	Specification
Analog RGB/YP_bP_r	
Analog video	RGB/YP _b P _r , interlaced or non-interlaced
Video level	Nominal 0.7V p-p (1.0V p-p)
Input impedance	75 ohms nominal
Sample rate	Up to 165 Msamples / sec
Sync type	Available sync types <ul style="list-style-type: none"> • 3 wire (Sync On Green) • 4 wire (Separate Composite Sync) • 5 wire (Separate H and V Sync)
Sync level	0.3V p-p (3 wire), 5V p-p (4 and 5 wire sync)
Analog HD video	
Video level	1V p-p (sync and video)
Sync	Tri-level
Sync level	0.6V p-p
Connector type	Sub miniature D connector type HD-15

**COMPOSITE
VIDEO INPUT
SPECIFICATIONS**

The table below lists composite video input specifications:

Table B-4. Composite Video Input Specifications

Parameter	Specification
Format	Composite, NTSC RS-170A or PAL CCIR 624
Number	Up to four composite channels (see S-Video Input Specifications on page 97 for details).
Input sampling	All inputs sampled as 3:2 pixels (CCIR 601 sampling)
Video levels	0.5 to 2.0V peak-to-peak; 1.0V peak-to-peak nominal
Sync levels	0.3 to 0.6V peak-to-peak
Connector type	BNC female

**S-VIDEO INPUT
SPECIFICATIONS**

The table below lists S-Video input specifications:

Table B-5. S-Video Input Specifications

Parameter	Specification
Format	S-Video (NTSC RS-170A or PAL CCIR 624)
Number	Up to four S-Video channels
Input sampling	All inputs sampled as 3:2 pixels (CCIR 601 sampling)
Video levels	0.5 to 2.0V peak-to-peak; 1.0V peak-to-peak nominal
Sync levels	0.3 to 0.6V peak-to-peak
Connector type	Four pin mini-DIN

**GRAPHIC OUTPUT
SPECIFICATIONS**

The table below lists high resolution graphic output specifications:

Table B-6. Graphic Output Specifications

Parameter	Specification
Analog	
Analog output level	Nominal 0.7V. pk to pk (excluding sync)
Output impedance	75 ohms
Sample rate	Up to 162 Msample/sec
Sync type	Available sync types: <ul style="list-style-type: none"> • 3 wire (sync on green), • 4 wire (separate composite sync) • 5 wire (separate H and V sync)
Sync level	0.3V p-p (3wire), 5V p-p max (4 and 5 wire)
DVI	
Max bandwidth	DVI single link (1.65Gbps)
Connector type	DVI-I MicroCross Integrated Digital / Analog Connector

**WINDOW CONTROL
SPECIFICATIONS**

The table below lists window control specifications:

Table B-7. Window Control Specifications

Parameter	Specification
Size	The size of each window can be scaled from thumbnail up to full screen.
Position	Windows may be positioned to an accuracy of one pixel horizontally and one line vertically. A window can be moved to any region of the display space, and if a portion is positioned off the screen, it is clipped.
Priority	Each window is assigned a priority by the user. When windows overlap, the window with the higher priority assignment appears in front of windows having a lower priority.
Zoom, Pan	Maximum Zoom range 32:1. Fully Pan within a zoomed window.
Other Functions	Video source select, freeze frame, brightness and contrast, hue and saturation.

**CONTROL
SPECIFICATIONS**

The table below lists SuperView 4000-4/4 control specifications:

Table B-8. Control Specifications

Parameter	Specification
Control Protocol	Control is accomplished by use of the SuperView 4000-4/4 ASCII based command set. This command set may be used with any of the control ports listed below.
Ethernet	10/100/1000 BaseT Ethernet port. <ul style="list-style-type: none"> Supports control of the full set of SuperView 4000-4/4 commands over a network connection using a Telnet server/client architecture. Internal SuperView 4000-4/4 web server provides graphical user interface when used with standard web browser.
RS-232 Port	SuperView 4000-4/4 commands can be sent through the RS-232 port to control the system. <ul style="list-style-type: none"> The RS-232 port transfers commands using the asynchronous serial protocol at 115200, 57600, 38400, 19200 or 9600 baud. The port is configured as DCE and can handle full duplex transfer. Support for hardware and software handshaking is provided. The SuperView 4000-4/4 RS-232 port connector type is a 9-pin sub miniature D connector.

**POWER AND
PHYSICAL
SPECIFICATIONS**

The table below lists SuperView 4000-4/4 power and physical specifications:

Table B-9. Power and Physical Specifications

Parameter	Specification
Input Voltage	90-264 VAC
Frequency	47Hz - 400 Hz
Power Consumption	65VA
Size	19" W x 15.3" x D x 1.75"H
Weight	14 pounds (6.4 kg)

PARAMETER STORAGE

This section describes the categories of settings that are stored in SuperView 4000-4/4 and how these settings are stored and retrieved.

FACTORY DEFAULTS

SuperView 4000-4/4 is shipped from the factory loaded with a set of pre-configured settings (parameters) known as Factory Defaults. As soon as you begin to use the unit these default settings will be replaced with your new settings. Your new settings are automatically stored by SuperView 4000-4/4 in non-volatile memory so that when you next turn on the unit it will start operating with the same settings you had when you last used the unit (even if you had turned off the power).

If you want to return to the factory settings this can be accomplished by executing the [RestoreFactoryDefaults](#) command ([Chapter 4](#)), or from the WCP Systems page.

Note

Restoring Factory Defaults will not affect the IP address settings of your SuperView 4000-4/4.

SYSTEM CONFIGURATION

When you turn on the power to your SuperView 4000-4/4, the unit automatically loads settings for all controls from non-volatile memory so that the device will function in the same way as before the power was turned off. This information is known as the System Configuration and is stored automatically in non-volatile memory by SuperView 4000-4/4.

USER CONFIGURATION

SuperView 4000-4/4 provides the ability for you to save your own set of default settings. This allows you to override the current settings and set up the unit in a way that you have previously defined. The [SAVECONFIGuration](#) command ([Chapter 4](#)), provides a manual way to save the current system settings into non volatile memory. The settings may then be loaded at any time using the [RECALLCONFIGuration](#) command. This is equivalent to using the [RestoreFactoryDefaults](#) command, but using your own set of default values instead of the factory defined defaults.

SETTINGS EXPORT/IMPORT

In addition to storing settings internally in non-volatile memory SuperView 4000-4/4 provides the ability to store settings to an external device such as a PC. The settings are stored in a text file that can be exported to, or imported from, the external device using the [SETTINGSEXPORT](#) and [SETTINGSIMPORT](#) commands. This file can be generated to contain all the system settings, or a subset of the settings as outlined below:

Tip

Recalling previously stored parameters will change the operation of your unit. Because there is no undo feature we recommend that you have a backup copy of your preferred settings. The copy could be stored internal to the SuperView 4000-4/4 using the [SAVECONFIGuration](#) feature, or externally using the [SETTINGSEXPORT](#) feature.

SYSTEM STATE VALUES

SYSTEM

Settings Export using the SYSTEM option will result in a text file that stores the system parameters as listed in the [System state values](#) section later in this chapter

TIMING

Settings Export using the TIMING option will result in a text file that stores the values for the output and all inputs as listed in the [Timing presets](#) section later in this chapter.

WINDOW

Settings Export using the WINDOW option will result in a text file that stores the values for the Window preset settings as listed in the [Window presets](#) section later in this chapter.

These subsets can be created using optional arguments to the `command`. If the [SETTINGSEXPORT](#) is not provided with an argument then the default state ALL will cause the generated file to contain the complete set of parameters consisting of the SYSTEM, TIMING and WINDOW settings.

There are several categories of system values (parameters) that are saved and these are outlined in the following section:

INPUT TIMING VALUES

Timing values for each graphics input

- Timing preset number
- Timing preset name
- Horizontal front porch, sync width, back porch, and active area (in pixels)
- Vertical front porch, sync height, back porch, and active area (in lines)
- Sync format
- Horizontal and vertical sync polarities
- Interlace/Non-interlaced
- Autosync mode

IMAGE CONTROLS (GRAPHICS)

The following parameters are stored for each graphics input

- Input signal source
- ADC sample phase
- De-interlacer mode
- ADC gain and offset values for Red, Green, and Blue channels
- Brightness, Contrast, Hue, Saturation and Sharpness for each of 3 possible input sources (RGB, DVI, YUV)

IMAGE CONTROLS (VIDEO)

The following parameters are stored for each video input.

- Input signal source
- Brightness, Contrast, Hue, Saturation, Filter settings, Aspect Ratio, and Over/Underscan mode for each of 3 possible input sources (Composite1, Composite2, S-Video)

OUTPUT CHANNEL

The following parameters are stored for the SuperView 4000-4/4 output

- Gamma
- Output sync source
- Background pattern type
- Background Red, Green, and Blue color values

OUTPUT TIMING VALUES

- Timing preset number
- Timing preset name
- Horizontal front porch, sync width, back porch, and active area (in pixels)
- Vertical front porch, sync height, back porch, and active area (in lines)
- Horizontal and vertical frequencies
- Sync format
- Horizontal and vertical sync polarities
- Scanning system (interlace/progressive)
- Output reference mode
- Aspect ratio

WINDOW SETTINGS

The following parameters are stored for each window

- Enable
- Source rectangle dimensions (X, Y, width, height)
- Destination rectangle dimensions (X, Y, width, height)
- Label Enable, position, justification, label text, color, background color
- Priority
- Border width, color

WINDOW MAPPING

The mapping of inputs to the window is stored for each window.

CONFIGURATION VALUES

- X and Y repeat rates used in interactive window position and pan
- Scale step used in interactive window size and zoom

SERIAL PORT SETTINGS FOR RS-232 CONTROL PORT

- Baud rate
- Echo
- Handshaking

WINDOW PRESETS

SuperView 4000-4/4 is capable of storing up to 10 window presets containing the following parameters:

- Input source selection for each input
- Background pattern selection
- Background color
- Window enable setting for each window
- Source rectangle dimensions for each window
- Destination rectangle dimensions for each window
- Window label enable, position, justification, label text, color, and background color for each window
- Window priority for each window
- Window border width and color for each window
- Window preset name for each window

TIMING PRESETS

In addition to the factory supplied timing presets, the user is allowed to save and recall up to 61 timing presets. Note that the SuperView 4000-4/4 has a common timing list that can be applied to either input or output ports.

There are three ways to create a timing preset entry. The first two of these are listed immediately below. Note that they store a limited number of timing parameters as listed in the timing preset list.

- Output Timing
Timing presets may be created by saving output timing settings using the [OutPutTiMingSAVE](#) command
- Direct loading
Timing presets may be created by directly loading them using the [TiMingLISTLOAD](#) command.

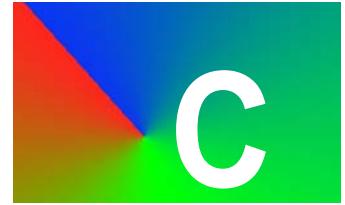
Timing presets contain the following parameters:

- Timing preset name
- Horizontal front porch, sync width, back porch, and active area (in pixels)
- Vertical front porch, sync height, back porch, and active area (in lines)
- Horizontal and vertical frequencies
- Sync format
- Horizontal and vertical sync polarities

- Interlace/De-interlace

Timing presets created by saving input timing using the **IInputSAVE** command will contain all of the above settings in addition to the following supplemental parameters:

- ADC sample phase
- De-interlacer mode
- ADC gain and offset values for Red, Green, and Blue channels
- Brightness, Contrast, Hue, Saturation, Filter settings, Aspect Ratio and Over/Underscan mode



CONNECTOR TYPES

CONNECTORS AND PINOUTS

This chapter provides information about the signal and control connectors used in SuperView 4000-4/4.

- [Composite Video Connector](#)
- [S-Video Connector](#)
- [High Resolution Analog Connector](#)
- [DVI-I Connector](#)
- [Ethernet Connector](#)
- [RS-232 Connector](#)

COMPOSITE VIDEO CONNECTOR

The Composite video signal inputs use the industry standard 75Ω BNC connector.

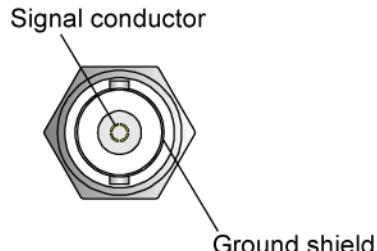


Figure C-1. BNC connector (viewed from rear of chassis)

The BNC connector is designed for use with coaxial cables. Coaxial cables are well suited for the transmission of high frequency signals over moderate distances. Coaxial cable is commonly available with a characteristic impedance of either 50 or 75Ω . Video signals exclusively use 75Ω cable and connectors. For best signal quality it is important to use a high quality 75Ω coaxial cable. The use of 50Ω cable will cause a signal mismatch which may result in visible artifacts on video images.

Ready made cables are available commercially or can be easily customized on site to suit your particular requirements.

S-VIDEO CONNECTOR

S-Video signals are generally of higher quality than analog composite video signals. Composite video signals combine the black and white (monochrome) signals together with color information on a single coaxial cable. S-Video signals, however, use two signal wires to keep the luminance (black and white) and chrominance (color information) signals separated.

CONNECTOR TYPE AND PINOUTS

SuperView 4000-4/4 uses the standard 4 pin mini-DIN connector allowing the use of standard, commercially available cables. The pinout for the standard S-Video connector is shown in the figure below.

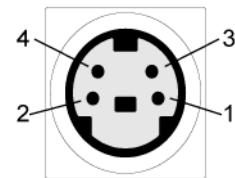


Figure C-2. S-Video connector (viewed from rear of chassis)

The 4-pin mini-DIN connector has the following signals:

Table C-1. S-Video Connector Pinouts

Pin	Signal	Description
1	Y (Luminance) Ground	Y shield
2	C (Chrominance) Ground	C shield
3	Y (Luminance) Signal	Y signal
4	C (Chrominance) Signal	C signal
Shield	Chassis ground	Ground

CABLE LENGTH

S-Video cables tend to be higher loss than the standard coaxial cable used for composite video which means that for best results cable lengths should be kept to a minimum. S-Video cables are available commercially.

HIGH RESOLUTION ANALOG CONNECTOR

Analog graphics signals are connected to the SuperView 4000-4/4 using a standard connector. In graphics applications, the signals are typically transmitted as separate Red (R), Green (G) and Blue (B) signals. Television signals are also sometimes transmitted in component form, but typically use a different format of signal using brightness (Y) and color difference signals (U,V). The SuperView 4000-4/4 can accept either types of signal from the high resolution input connector.

CONNECTOR TYPE AND PINOUTS

The high resolution (RGB / YUV) HDTV inputs are connected using a sub miniature 15 pin D-type (HD-15), as shown below. This connector is often referred to as a VGA or VESA connector, and supports the VGA, SVGA, XGA, SXGA and UXGA signals.

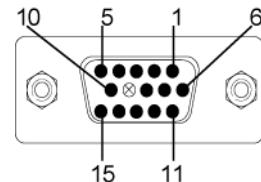


Figure C-3. RGB Analog Connector (viewed from rear of chassis)

The table below lists signals for the 15 pin D-type (HD-15) connector, including the pinout for the RGB analog input and the correct connections for YUV inputs. Note that the analog input supports RGB, YUV, and HDTV signals.

Table C-2. RGB Analog Video Connector Pinouts

Pin	Signal	Description
1	R	Red signal (alternatively used for V)
2	G	Green signal (alternatively used for Y)
3	B	Blue signal (alternatively used for U)
4	NC	ID2 (not used)
5	NC	GND TEST
6	Ground	Red ground
7	Ground	Green ground
8	Ground	Blue ground
9	no pin (key)	
10	Chassis ground	Ground
11	NC	ID0 (not used)
12	NC	ID1 (not used)
13	CS/HS	Composite Sync or Horizontal Sync

Table C-2. RGB Analog Video Connector Pinouts (continued)

Pin	Signal	Description
14	VS	Vertical Sync
15	NC	ID3 (not used)

CABLE LENGTH

High quality RGB or YUV signals have very high signal bandwidths. Cable lengths should be kept as short as possible as longer cable lengths attenuate the signal more severely at higher bandwidths.

DVI-I CONNECTOR

The DVI connector is used to interconnect graphics devices. This is a standard connector based on the work of the Digital Display Working Group (DDWG).

CONNECTOR TYPE AND PINOUTS

The connector used in the SuperView 4000-4/4 is a 29-pin DVI-I connector, supporting both analog and digital signals. The DVI-I connector (as shown below) is used for the standard SuperView 4000-4/4 DVI output signals and the optional digital DVI input signals.

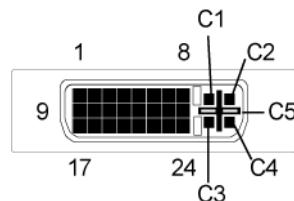


Figure C-4. DVI-I Digital/Analog Connector (viewed from rear of chassis)

The 29 pin DVI-I connector has the following signals:

Table C-3. DVI-I Connector Pinouts

Pin	Signal	Description
1	TMDS Data 2-	
2	TMDS Data 2+	
3	TMDS Data 2/4 shield	
4	NC	Defined for Dual Link only
5	NC	Defined for Dual Link only
6	DDC Clock	
7	DDC Data	
8	Analog Vertical Sync	Horizontal sync is on pin C4
9	TMDS Data 1-	
10	TMDS Data 1+	
11	TMDS Data 1/3 shield	
12	NC	Defined for Dual Link only
13	NC	Defined for Dual Link only
14	+5V Power	5 V fused @ 300mA.
15	Ground	
16	Hot Plug detect	

Table C-3. DVI-I Connector Pinouts (continued)

Pin	Signal	Description
17	TMDS Data 0-	
18	TMDS Data 0+	
19	TMDS Data 0/5 shield	
20	NC	Defined for Dual Link only
21	NC	Defined for Dual Link only
22	TMDS Clock shield	
23	TMDS Clock+	
24	TMDS Clock-	
C1	Analog Red	Red signal
C2	Analog Green	Green signal
C3	Analog Blue	Blue signal
C4	Analog H sync	Analog Horizontal Sync signal
C5	Analog Ground	Common analog ground (R,G,B, sync)

INPUT CABLES

The standard SuperView 4000-4/4 provides a standard 15 pin sub miniature D connector for the analog input signals (see the [High Resolution Analog Connector](#) section on page 107 for details). Digital Graphics inputs can be connected using the DVI input option. Standard cables are available commercially for various lengths to allow connection to DVI graphics outputs.

OUTPUT CABLES

Both the digital and analog outputs of the SuperView 4000-4/4 are provided on the DVI output connector. Purpose built cables are available commercially to provide connections for digital interfaces or analog interfaces. The SuperView 4000-4/4 is provided with a DVI-15 pin adapter for use with analog devices, or alternatively an analog only output cable can be purchased that provides a break out capability to separate RGB connectors or sub miniature 15 pin D connector.

ETHERNET CONNECTOR

CONNECTOR TYPE AND PINOUTS

The Ethernet connector is a standard RJ-45 type connector.

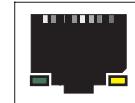


Figure C-5. Ethernet connector (viewed from rear of chassis)

The 8 pin RJ-45 Ethernet connector has the following signals:.

Table C-4. Ethernet Connector Pinouts

Pin	Signal	Wire Color
1	TX Data +	White/Orange
2	TX Data -	Orange
3	RX Data+	White/Green
4		Blue
5		White/Blue
6	RX Data-	Green
7		White/Brown
8		Brown

STANDARD CABLES

Standard Ethernet cables are available commercially in many different lengths. The standard cable is wired pin for pin (straight through) which means that pin 1 of the connector at one end of the cable is wired to pin 1 of the connector at the opposite end of the cable. This type of cable is used to connect the SuperView 4000-4/4 directly to the network typically using an Ethernet hub or switch. To connect directly from a PC to the SuperView 4000-4/4, a cross over cable must be used (see the following section for details).

CROSS OVER CABLES

To connect directly from a PC (such as a laptop) to the SuperView 4000-4/4 without connecting to the network, an Ethernet cross over cable must be used. Cross over cables are available commercially.

In a cross over cable, one end of the cable is wired as a straight through cable, using the pin assignments shown in [Table C-4](#). At the other end of the cable, the TX and RX interconnections are exchanged (crossed over).

Ethernet uses balanced differential signals on twisted pairs of conductors. It is important to use wires from the same pair for each pair of signals. The standard pairs are shown in [Table C-4](#). Note that one wire of the pair has a solid color. The other wire (of the pair) is white with a stripe of the same color as the other wire (e.g., Orange and White/Orange).

RS-232 CONNECTOR

The RS-232 port is configured according to the Electronic Industries Association Standard RS-232-C published in August 1969. The SuperView 4000-4/4 can be explicitly controlled with ASCII Command Set instructions sent via the RS-232 serial port from either a computer or an ASCII terminal. In Chapter 4, refer to the [Command Set](#) section for details on all commands.

CONNECTOR TYPE AND PINOUTS

Physically, the RS-232 port is a 9-pin D-Sub female connector. The pins for the RS-232 connector are numbered from top to bottom, right to left. Looking at the connector, pin #1 is located in the upper right corner, and pin #9 is in the lower left corner.

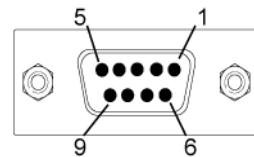


Figure C-6. 9-pin D-Sub RS-232 Female Connector

The 9-pin D-Sub connector has the following signals:

Table C-5. RS-232 Serial Connector Pinouts

Pin	Circuit	Description
1	CD	Carrier Detect
2	TD	Transmit Data
3	RD	Received Data
4		(not connected)
5	AB	Signal Ground (common return)
6	DSR	Data Set Ready
7	CTS	Clear to Send
8	RTS	Request to Send
9		(not connected)

NULL MODEM

You may need to connect the SuperView 4000-4/4's serial port to a computer configured as Data Communications Equipment (DCE). This is done using a null modem. The net effect of a null modem is to reverse the Transmitted Data and Received Data connections within the cable. Also, the Request to Send (RTS) and Clear to Send (CTS) connections are reversed. This may be done by using a special null modem cable, or by inserting a small null modem box or cable in series with a regular straight through cable.



MAINTENANCE AND TROUBLE SHOOTING

This chapter deals with routine maintenance, firmware upgrades and troubleshooting the SuperView 4000-4/4.

MAINTENANCE

SuperView 4000-4/4 is designed to operate without the need for routine maintenance when used in office and controlled environments.

OVER- TEMPERATURE

The SuperView 4000-4/4 is equipped with a temperature sensor and over-temperature alarm. The alarm will activate when the temperature of the main board exceeds 60 degrees Celsius. This may be due to either excessive ambient temperature, or inadequate airflow through the unit. Make sure that the ventilation holes are not obscured.

FIRMWARE VERSION & UPDATES

From time to time, new features or improvements are made to the SuperView 4000-4/4 firmware. Your SuperView 4000-4/4's system firmware can be updated directly on site as soon as you have a copy of the new firmware. Please visit our website (<http://www.rgb.com>) support section for information about recent changes and firmware version numbers.

You can identify your current firmware version numbers from the **SYSTEM** page on your SuperView 4000-4/4 WCP or use the command **VER** from the command line interface.

UPDATING SYSTEM FIRMWARE

The firmware version in the SuperView 4000-4/4 can be field updated **only** via the Ethernet port. This means that your PC will need to be connected to the SuperView 4000-4/4 directly or through a network connection.



The following two items are required for this procedure:

- Computer configured for a 10/100/1000 Base-T network connection.
- Current firmware update file and update instructions.

Important

Do not update your firmware without these two items. If you want to update using a direct connection from a PC to the SuperView 4000-4/4 (not using a network) then be sure to use a crossover cable. See page 18 for further details.

Firmware can be updated by using either a Web browser, or by a command line interface using the standard file transfer protocol ftp. Both of these methods are described in the following section.

UPDATE FROM A WEB BROWSER (FTP)

The upgrade procedure is a three step process.

The most convenient way to upgrade the firmware is to use a standard web browser using ftp. You will also need to use a serial or telnet terminal to finalize the upgrade process.

Step 1. Download new firmware to your computer.

- Go to the **support** section of the RGB website: <http://www.rgb.com> and click on Product Support for the SuperView 4000-4/4. There you'll find a link to Download Firmware.
- Put the new version of firmware in a directory that you can access directly from the PC that you will be using for the update. The file name will be of the form 'fwop_x.xx.tar', where x.xxx represents the version number.

NOTE: Whenever you see reference to the file name fwop_x.xx.tar in this document, type the actual file name you will be upgrading to.

Step 2. Transfer the new firmware to SuperView 4000-4/4

- Connect the SuperView 4000-4/4 to the PC using the Ethernet port either directly or via a network
- Launch your web browser, and in the browser address bar type the following address:
ftp://<ip address>, where <ip address> represents the IP address of the SuperView 4000-4/4 that you are intending to upgrade.

▲ Example - if the ip address of your SuperView 4000-4/4 is 192.168.1.200 type **ftp://192.168.1.200**

- At the login screen type 'rgb' for user name and 'spectrum' for the password (be sure to use lower case characters).
- Cut and paste the upgrade file 'fwop_x.xx.tar', into the browser page (where x.xx represents the version number). Alternatively drag the file and drop onto the browser page.
- Check that the file is now shown in the browser page.

Step 3. Load the new firmware

- Connect your PC to the SuperView 4000-4/4 via the serial port.
- From the SuperView 4000-4/4 command line prompt type the command **ufw**'.
- The SuperView 4000-4/4 will ask for confirmation that you wish to proceed. Press **y**' to continue or **n**' to halt the process.
- SuperView 4000-4/4 will proceed with loading the files.
- When the loading process has completed you will see the message you may now restart the system .
- Press the front panel reset switch (Reset Button on page 9), or cycle the power by switching the power switch off and on again.
- Wait a few seconds for the system to start, and verify that the new firmware is loaded by typing the command **ver**' from the SuperView 4000-4/4 command line in your serial terminal emulator.
- If the update was successful close the browser window to end the ftp session.

UPDATE FROM A COMMAND WINDOW (FTP)

An alternate method to upgrade the firmware is to use the standard network file transfer protocol known as **ftp**'. The upgrade procedure is a two step process

Step 1. Transfer the new firmware to SuperView 4000-4/4

- Put the new version of firmware in a directory that you can access directly from the PC that you will be using for the update. The file name will be of the form **fwop_x.xx.tar**', where x.xxx represents the version number.
NOTE: Whenever you see reference to the file name **fwop_x.xx.tar** in this document, type the actual file name you will be upgrading to.
- Connect the SuperView 4000-4/4 to the PC using the Ethernet port either directly or via a network.
NOTE: If you are connecting directly from your PC to the SuperView 4000-4/4 you will need an Ethernet crossover cable.
- Open a Windows Command window and type the command **ftp**' and press the ENTER key. This will open an ftp terminal.
- At the ftp prompt type the command **open <ipaddress>**' and press the ENTER key (where **<ipaddress>** is the IP address of your SuperView 4000-4/4).
- If you have connected successfully in the command window you will see a message indicating that you are connected to the IP address of the SuperView 4000-4/4.
- At the prompt enter the user name **rgb**' (lower case) and press the ENTER key. You will then be prompted for a password. Type **spectrum**' and press the ENTER key. You should see the message **230 User rgb logged in**' as shown in Figure D-1 below.

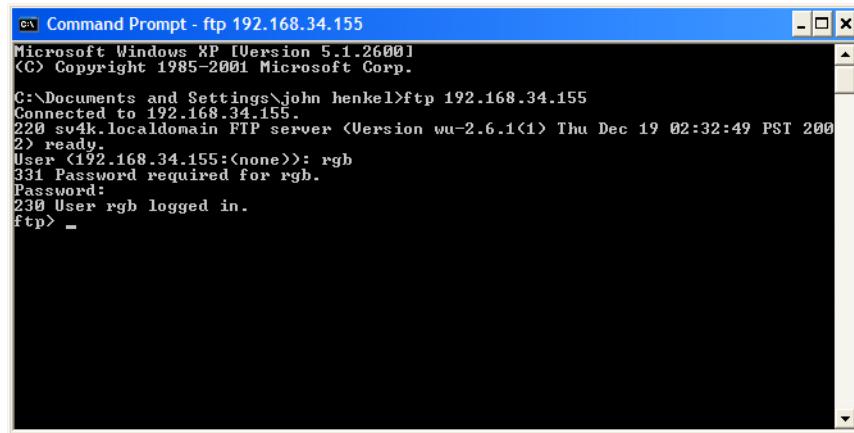


Figure D-1. Windows FTP Login Screen

- Type the command **bin**' at the ftp prompt and press the ENTER key.
- Type the command **put fwop_x.xx.tar**' (where x.xx represents the version number) and press the ENTER key. This will copy the firmware to the SuperView 4000-4/4.
- Type the command **quit**' at the ftp prompt and press the ENTER key to close the ftp session.

Step 2. Load the new firmware

- Connect your PC to the SuperView 4000-4/4 via the serial port.
- From the SuperView 4000-4/4 command line prompt type the command **ufw**' and press the ENTER key.
- The SuperView 4000-4/4 will ask for confirmation that you wish to proceed. Press **y**' to continue or **n**' to halt the process.
- SuperView 4000-4/4 will proceed with loading the new firmware. When the loading process has completed you will see the message you may now restart the system .
- Press the front panel reset switch (Reset Button on page 9), or cycle the power by switching the power switch off and on again.
- Wait a few seconds for the system to start, and verify that the new firmware is loaded by typing the command **ver**' from the SuperView 4000-4/4 command line in your serial terminal emulator.

You have now completed installation of the new firmware.

SYSTEM TROUBLESHOOTING

Problems with SuperView 4000-4/4 operation may result from incorrect system connections and settings. In the event of difficulty or anomalous results, first check the following basic items:

- Cable connections
- The video format associated with each input
- The display device timing selected
- Any system options currently in effect
- Query the current settings of the parameter in question to determine SuperView 4000-4/4's current values.

Some of these items are discussed in detail in the [Troubleshooting Guide](#) section below.

Important

SuperView 4000-4/4's hardware should only be modified or repaired by RGB Spectrum's technicians.

TROUBLESHOOTING GUIDE

Use the table below to troubleshoot the SuperView 4000-4/4. If problems persist, refer to Appendix E, [Contact Information](#) section for technical support instructions.

Table D-1. Troubleshooting Guide

Symptom	Recommendations
No power or lights	<ul style="list-style-type: none"> • Check that the SuperView 4000-4/4 is plugged in and powered on.
No signal or a poor signal on the display.	<ul style="list-style-type: none"> • Check that cables are connected correctly. • Turn on a test pattern using the TestPattern function, and determine the quality of the output image. • Make sure that an appropriate set of output parameters are loaded from the Timing Format List for your current display.
Power light is on but unit does not function	<ul style="list-style-type: none"> • Check the front panel alarm light. This light is initially turned on, and is turned off when the control system has completed its internal tests. If the light is not turned off within 30 seconds the control system has detected an internal fault. Cycle the power to try again, and if the problem persists contact RGB Spectrum Customer Service for assistance.
No windows visible	<ul style="list-style-type: none"> • Ensure that at least one window is enabled using the WindowENable function. • Ensure that windows are not obscuring other windows. Turn all windows off using the WindowENable function, then enable the window in which you are working. • Ensure that the window in which you are working has not been positioned off screen. Use the WSR and WDR query commands to determine where windows are positioned.

Table D-1. Troubleshooting Guide (continued)

Symptom	Recommendations
Windows have the wrong aspect ratio (i.e., are stretched) or are not positioned correctly	<ul style="list-style-type: none"> Try selecting a different output from the Timing Format List to better match your display. Determine that there is not a mismatch between your output and the selected monitor display (e.g., 4:3 output and 16:9 display monitor). Use the WindowSource Rectangle (WSR) and WindowDestinationRectangle (WDR) functions to check or modify the image's aspect ratio.
Blank video window (the window is black)	<ul style="list-style-type: none"> Ensure that the window's video source is properly connected to the system, powered on and generating a signal. Ensure that the correct type is selected (Composite, Component, S-Video or Digital) using the INputSOUrCe command.
Frozen window(s)	<p>If a window is frozen after system start-up, turn freeze off using the FReeZe command.</p>
Missing window imagery	<ul style="list-style-type: none"> Check the WindowSource Rectangle (WSR) value to ensure the entire image is being processed. Check WSR and WindowDestinationRectangle (WDR) to ensure that the source and destination rectangles are delivering the entire video image.
Poor quality video	<ul style="list-style-type: none"> Check the video source for proper operation. Check that cables are in good condition and connected correctly. Ensure that video sources are not double terminated. Double termination can occur when one video source is split into two using a T connector instead of a distribution amplifier. If you are using a VCR, check the quality of the tape. Adjust the brightness using the BRight command. Adjust contrast using the CONTrast command. Adjust saturation as required using the SATuration command. Adjust the hue as required using the HUE command.
No color on the S-Video input	<ul style="list-style-type: none"> Check that the saturation setting is set to normal. Adjust as necessary. Check that the S-video cable is connected correctly. Check that the window has S-Video selected as its source. If you select Composite2 when you have an S-Video signal connected to this port, the input will be displayed as a black and white (luminance only) signal.
Aspect Ratio on a video input is incorrect.	<ul style="list-style-type: none"> Check the status of the VideoAspectRatio command. For a 4:3 aspect ratio signal, this should be set to normal.

Table D-1. Troubleshooting Guide (continued)

Symptom	Recommendations
No text on a terminal	<ul style="list-style-type: none"> To see your own typed entries, enable the echo mode when using an ASCII terminal or terminal emulation program to control the system from the RS-232 port. Use the ECHO command to enable or disable the echo mode. When using an application program running on a computer to control the SuperView 4000-4/4's functions over the RS-232 port, you may need to disable the echo mode. Check baud rate and protocol settings. Check cables are in good condition and connected correctly.
Unreliable control of the SuperView 4000-4/4 from the RS232 port.	<ul style="list-style-type: none"> See the recommendation immediately above. You may need to disable ECHO. Check that the BAUDrate for the SuperView 4000-4/4 and your console device are set to the same speed. Check that all the terminal properties are set correctly. See RS-232 Serial Control Setup on page 14.
Unable to connect to the SuperView 4000-4/4 over the network.	<ul style="list-style-type: none"> Check that the SuperView 4000-4/4 is connected to the network using a standard Ethernet cable. Check that you are using the correct IP address. If you are unable to connect and are sure that IP address is correct, check the Subnet mask and make sure that it is suited to your network configuration. If you believe the IP address and Subnet mask are correct but you still cannot connect, check that this is not a duplicate IP address. Use the IP ping command from the WINDOWS command window, and see if there is a response. If there is a response, turn off the SuperView 4000-4/4 and ping the IP address again. If there is still a response, a duplicate address exists.
Unable to connect to the SuperView 4000-4/4 directly from a PC (peer to peer connection).	<ul style="list-style-type: none"> Check that the SuperView 4000-4/4 is connected to the PC using an Ethernet cross over cable (A suitable cable is the Belkin Part # A3X126-07). Check that you are using the correct IP address. If you are unable to connect and are sure that the IP address is correct, check the IP settings of your PC. Many PCs are set to work with a DHCP server which is not present when connecting directly to the SuperView 4000-4/4. If you believe the SuperView 4000-4/4 IP address is correct and your PC has a valid IP address, but you still cannot connect, check that this is not a duplicate IP address. Use the IP ping command from the WINDOWS command window, and see if there is a response. If there is a response, turn off the SuperView 4000-4/4 and ping the IP address again. If there is still a response, your PC has been set with the same address as the SuperView 4000-4/4.

Table D-1. Troubleshooting Guide (continued)

Symptom	Recommendations
After logging in to the WCP, unable to see the Virtual screen on the main page	<ul style="list-style-type: none">• If the menu bar appears but the virtual screen does not appear in the main page, the Java Virtual Machine (JVM) may not be installed on your PC. This is available free of charge from the Sun Microsystems web site. The JVM version must be 1.50 or higher.
Front Panel Alarm indicator is illuminated	<ul style="list-style-type: none">• If the unit is operating normally but the front panel Alarm indicator is illuminated the temperature is above the safe operating temperature. To avoid damaging the unit, it is recommended that you turn off the unit and correct the temperature problem



CONTACT INFORMATION

HOW TO CONTACT

RGB SPECTRUM

RGB Spectrum can be reached via phone, fax, mail and e-mail as listed below:

- **RGB Spectrum**
950 Marina Village Parkway
Alameda, CA 94501
- Phone: (510) 814-7000
- Fax: (510) 814-7026
- E-Mail (technical support): support@rgb.com
- E-Mail (sales and product information): sales@rgb.com
- Website: <http://www.rgb.com>